

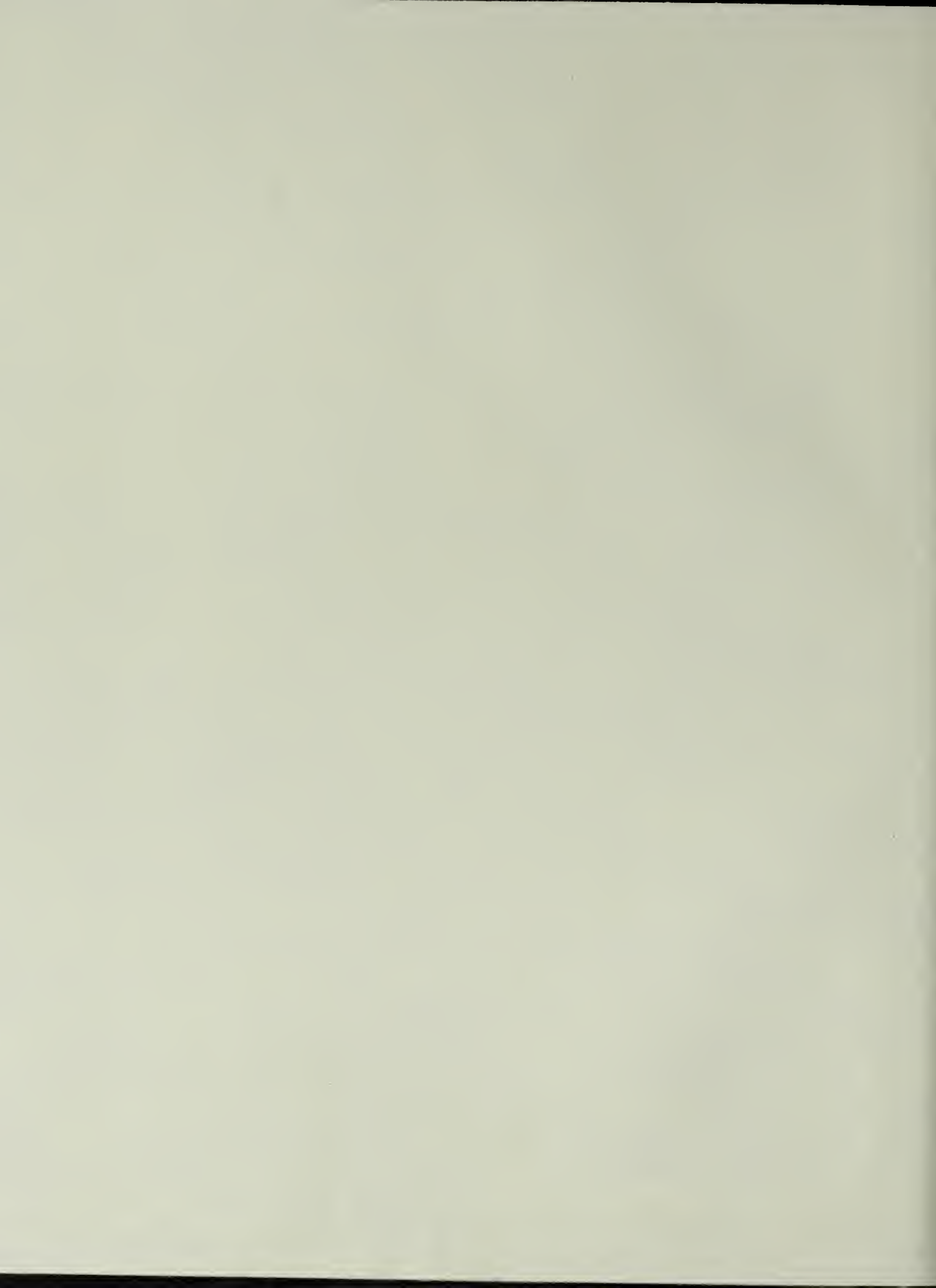
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# ***Adolescent Births: A Statistical Profile***

***Massachusetts  
1992***

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***Massachusetts Department of Public Health  
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Office of Statistics and Evaluation***

***April 1995***

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# ***Adolescent Births: A Statistical Profile***

***Massachusetts  
1992***

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Argeo Paul Cellucci, Lieutenant Governor

Gerald Whitburn, Secretary, Executive Office of Health and Human Services

David H. Mulligan, Commissioner of Public Health

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April 1995

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# Executive Summary

## Introduction

Teenage pregnancy has been identified as an enduring national public health problem (IOM, 1988). Young women less than 20 years old are at increased risk for a variety of poor pregnancy outcomes, including miscarriages, premature delivery, fetal and infant deaths, and other pregnancy complications such as anemia and pregnancy-induced hypertension (Benson and Pernoll, 1994). Teenagers are less likely to receive adequate prenatal care, and their infants have higher rates of low birth weight compared with women of all ages. In addition to the health issues associated with early child bearing, there are a host of economic and social consequences, such as high rates of school drop outs which may affect long-term earning potential and contribute to future health problems (IOM, 1988). National studies also have estimated that over 50% of births among teenage women are unwanted, particularly among those who were not married (Klerman and Jekel, 1984).

Although teenage birth rates are consistently lower in Massachusetts compared to the United States as a whole, teen pregnancy is an ongoing concern. *Adolescent Births: A Statistical Profile, Massachusetts, 1992* presents selected statistics and trend data on adolescent resident births in Massachusetts, as well as comparisons with national data for certain indicators. In this report, teenagers refer to young women less than 20 years old unless otherwise noted. Please refer to the Glossary for definitions of other terms. These data are intended to provide information to adolescent service delivery programs to assist with program planning and evaluation, to provide baseline measures for researchers, and to assist policy makers in their efforts to address adolescent reproductive issues.

The report contains four sections: demographic and birth characteristics; birthweight, gestational age and adequacy of prenatal care; teen birth rates and birth characteristics for 25 communities with the highest number of teen births; and teen birth characteristics for all 351 communities in Massachusetts and for the 27 Community Health Network Areas (CHNAs). Massachusetts data are from the Registry of Vital Records and Statistics, Massachusetts Department of Public Health (MDPH). U.S. data are from the Centers for Disease Control and Prevention/National Center for Health Statistics (NCHS).

## Summary

We recommend that the following cautions be kept in mind when examining the data:

- In cases where there are small numbers of teen births, especially at the city/town level and by race/ethnicity or age, small changes in the numbers from year to year will produce large changes in percentages, making the differences seem more significant than they are in reality.
- Percentages are based on the number of births or mothers that have known information regarding a demographic or birth characteristic. The numbers of births or mothers that have known information vary depending on the type of information, e.g., age and race/ethnicity of mother, level of prenatal care, birthweight, etc.



- Birth rates (number of births per 1,000 women) are calculated using Census counts of the resident population of Massachusetts. Because the Census is taken only every ten years, the yearly numbers of residents in each city/town and in the state for non-Census years are projected estimates. These projections do not make adjustments for migration into or out of geographical areas. Therefore, while the numbers of births are accurate, the numbers of resident women may be underestimated, resulting in inflated birth rates, or overestimated, resulting in lower birth rates.

## **I. State-Wide Demographic and Birth Characteristics**

- In 1992, 6,676 infants were born to Massachusetts young women less than 20 years old. Of these infants, 2,571 had mothers who were under age 18, and 121 had mothers who were under age 15.
- The Massachusetts population is aging. As the proportion of teenage women in the population declines (from 13.7% in 1980 to 9.8% in 1990) the percent of births to teens has declined correspondingly (10.7% of all births in 1980, 7.7% in 1992).
- It appears that efforts to reduce teen birth rates are succeeding in Massachusetts, but not in the nation as a whole. The teen birth rate in Massachusetts declined between 1989 and 1992, from 35.9 to 31.8 births per 1,000 females aged 15-19. Nationally, teen birth rates have been consistently higher than in the Commonwealth. The rates increased between 1988 to 1991, from 53.0 to 62.1, and declined in 1992 to 60.7.
- As Massachusetts has become more racially and ethnically diverse, the distribution of births among teenagers has changed. In 1987, 63.0% of all teen births were to white non-Hispanic mothers; by 1992 that figure had declined to 53.1%. The largest increase was among Hispanic mothers. The percentage of teen births to Hispanic mothers jumped from 17.1% in 1987, to 26.0% in 1992.
- Efforts to reduce repeat pregnancies among teenagers must be strengthened. In 1992, over one out of five infants born to teenage women had at least one sibling (21.5% of teen births were to mothers who already had at least one prior live birth).
- Of all teen women giving birth in 1992, 87.8% were unmarried. The percent of births to unmarried teens grew from 56.9% in 1980, to 83.3% in 1990. This trend is also reflected among births to women ages 20 and older; the percent of births to unmarried women increased from 10.7% in 1980, to 19.6% in 1990, and to 20.8% in 1992.

## **II. Birthweight, Gestational Age, and Adequacy of Prenatal Care**

- Infants of teen mothers are at increased risk of low birthweight (LBW) compared to all infants. In 1992, 8.0% of births to teens were LBW (n=536) compared to 5.9% of all births (n=5,139). LBW variation by race/ethnicity among teen births paralleled that found among all births in 1992, with the lowest rates among infants with white non-Hispanic mothers (6.5%), followed by infants with Hispanic mothers (8.6%). Infants of Asian



teenage mothers had the highest LBW percentage of any racial/ethnic group, 12.9%, although the numbers were extremely small (n=23). The LBW rate among infants of black non-Hispanic teens was 11.3%.

- The percentage of LBW infants was higher among infants whose mothers were less than 18 years old (9.3%) compared with all teen births (8.0%). This was true across racial/ethnic groups with the exception of infants of black non-Hispanic mothers.
- In 1992, a higher percentage of infants of teen mothers were born prematurely (gestational age < 37 weeks) compared to all infants (9.0% vs. 7.2%). There was substantial variation by race/ethnicity among teenage births. The percentage of premature births was lowest among infants with teenage white non-Hispanic mothers (7.6%), followed by infants with Asian mothers (9.6%) and Hispanic mothers (10.6%). Among infants with teenage black non-Hispanic mothers, 13.3% were premature.
- Teens typically have lower levels of prenatal care utilization than mothers of all ages. In 1992, only 63.5% of teen mothers had adequate prenatal care compared to 82.9% of all women who delivered that year. Asian teens had the lowest level of adequate prenatal care (41.5%), followed by black non-Hispanic teens (53.5%). The figures for white non-Hispanic and Hispanic teens were comparable (66.7% and 65.7% respectively).
- Teen mothers with adequate use of prenatal care had a lower percentage of LBW infants compared with mothers who had inadequate care, 7.9% and 12.3%, respectively. This relationship held across all racial/ethnic groups.
- Teen mothers breastfeed less frequently than adult women; 60.0% of all women delivering in 1992 were breastfeeding their infant at discharge from the hospital or intending to breastfeed their infants, while only 38.0% of teen mothers did so. There was substantial variation in breastfeeding among teenage mothers by race/ethnicity, with the highest level of breastfeeding among infants with Hispanic mothers (49.6%), followed by infants with black non-Hispanic mothers (40.2%), and infants with white non-Hispanic mothers (32.9%). The lowest level was among infants with Asian mothers (21.9%).

### III. Birth Characteristics for Selected Communities

State-wide data often mask variation among individual communities. In this section, statistics are given for the 25 Massachusetts communities with the highest number of births among teenagers in 1992.

- Among the 25 selected communities, the five highest teen birth rates in 1992 were in: Holyoke (127.9 births per 1,000 Holyoke women aged 15-19), Lawrence (112.5), Chelsea (97.5), Springfield (88.8), and Southbridge (88.1).
- Salem and Pittsfield had the highest percentage of low birthweight among births to teen mothers (16.4%). The next four highest communities were Cambridge (13.7%), Brockton (12.1%), Somerville (10.8%), and Framingham (10.4%).

- Pittsfield had the highest percent of teen births with inadequate or no prenatal care (18.2%). Holyoke was next (16.9%), followed by Somerville (14.3%), Brockton (12.6%), and Fitchburg (10.1%). The statewide percentage of inadequate or no prenatal care among teenagers was 7.6%.
- In Lawrence, a third (33.0%) of births to teens were at least a second birth. Holyoke had the second highest percentage (31.7%), followed by Worcester (29.6%), Southbridge (29.4%), and Springfield (28.6%). The percentage of second or higher births among teenagers statewide was 21.5%.
- The relation between teen pregnancy and education was examined through a table that records the percentage of teen mothers who were one or more years behind their appropriate grade level at the time of the birth of their child. Statewide, 31.2% of teen mothers were one or more years behind their appropriate grade level in 1992. Over half of teen mothers were one or more years behind in Holyoke (52.1%), followed by Fitchburg (46.4%), Lowell (44.9%), Lawrence (43.0%), and Fall River (42.7%).

#### **IV. Birth Characteristics for all 351 Communities and the 27 Community Health Network Areas**

The last two tables in this report contain the following statistics for every city and town in Massachusetts and for the 27 Community Health Network Areas (CHNA): the number of births to women less than 18 and less than 20 years of age; the number of women under 20 years old beginning prenatal care in the first trimester; and the number of women under 20 whose prenatal care was paid for with public funds. Since these numbers are often very small no percentages are calculated in these tables.

The Department of Public Health, in collaboration with health service providers, coalition members, and interested citizens, has divided the state into 27 Community Health Network Areas for community health planning. A Community Health Network Area (CHNA) is defined as an aggregation of cities and towns; the city of Boston constitutes its own CHNA. The cities and towns which make up each CHNA, are listed in the Appendix.

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 Benson and Pernoll (1994) *Handbook of Obstetrics and Gynecology*, Ninth Edition, McGraw Hill, Inc.  
 Klerman and Jekel (1984) "Unwanted Pregnancy" in *Perinatal Epidemiology*, ed. Michael B. Bracken, Oxford University Press.

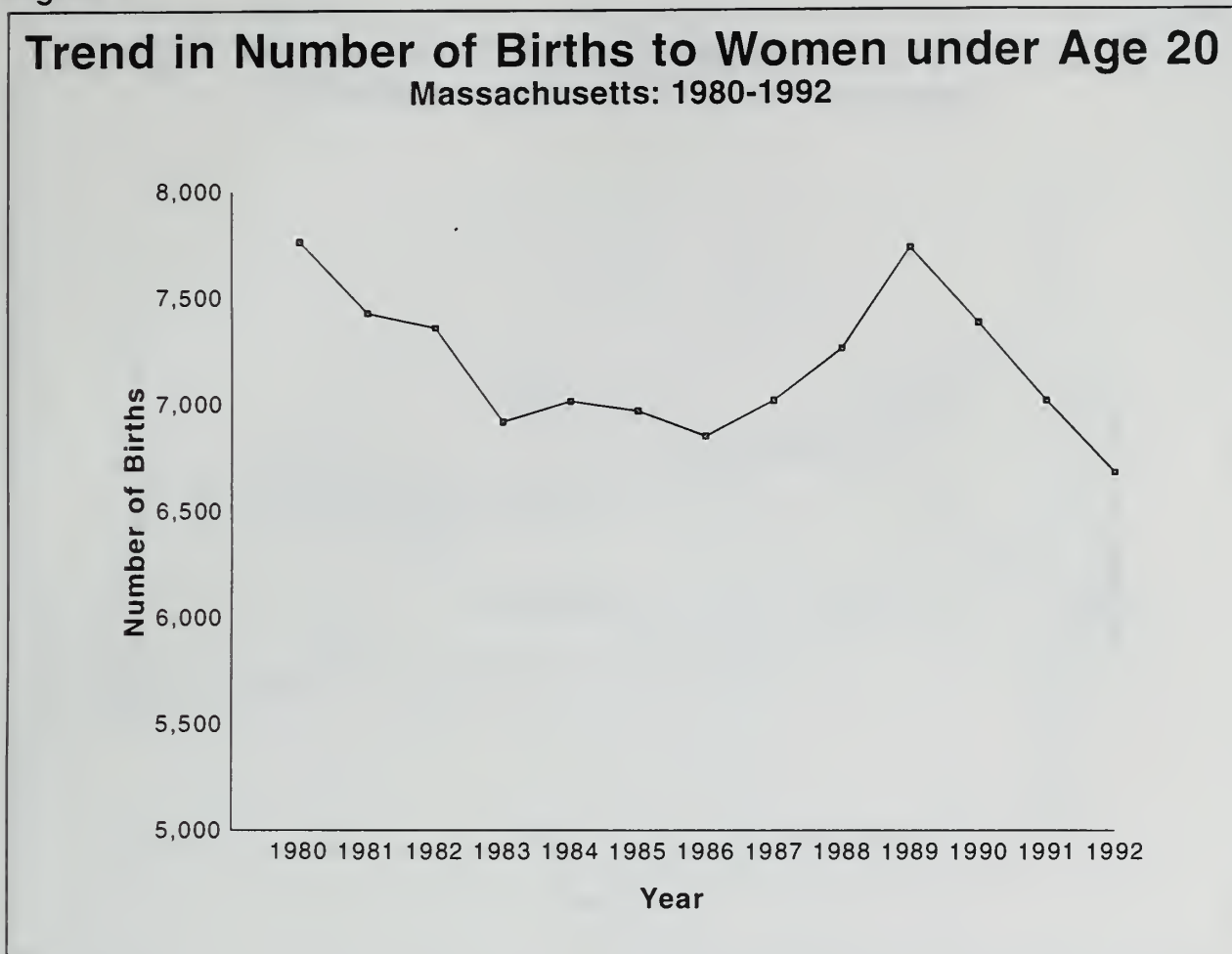
I.

*Demographic  
and Birth  
Characteristics*





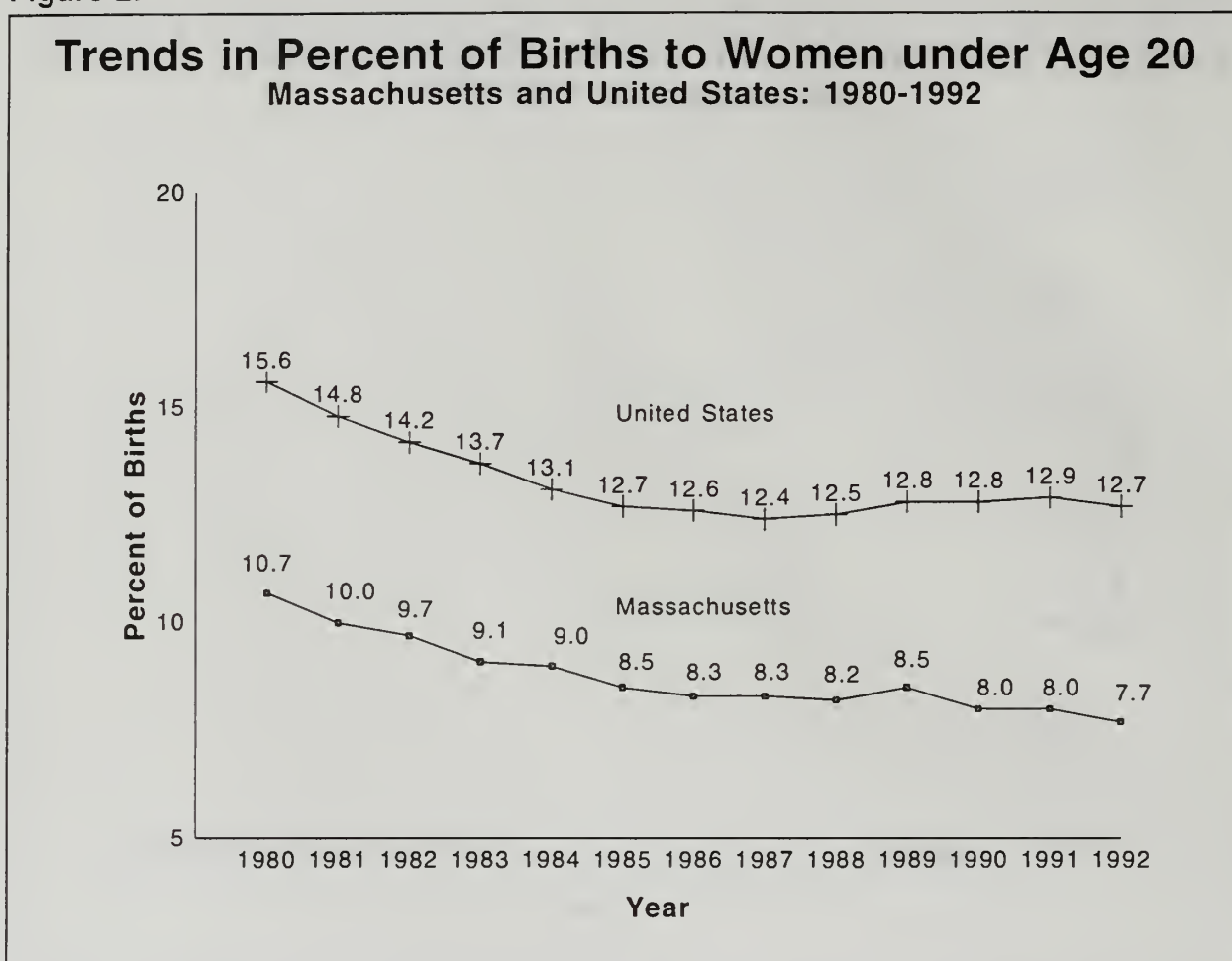
Figure 1.



Source: Registry of Vital Records and Statistics, MDPH, 1992.

- In 1992, 7.7% (6,676) of all resident births in Massachusetts were born to women under age 20. This was the lowest number since 1980.
- The number of births to teens declined 13% from 1980, when 7,694 infants were born to teen mothers.

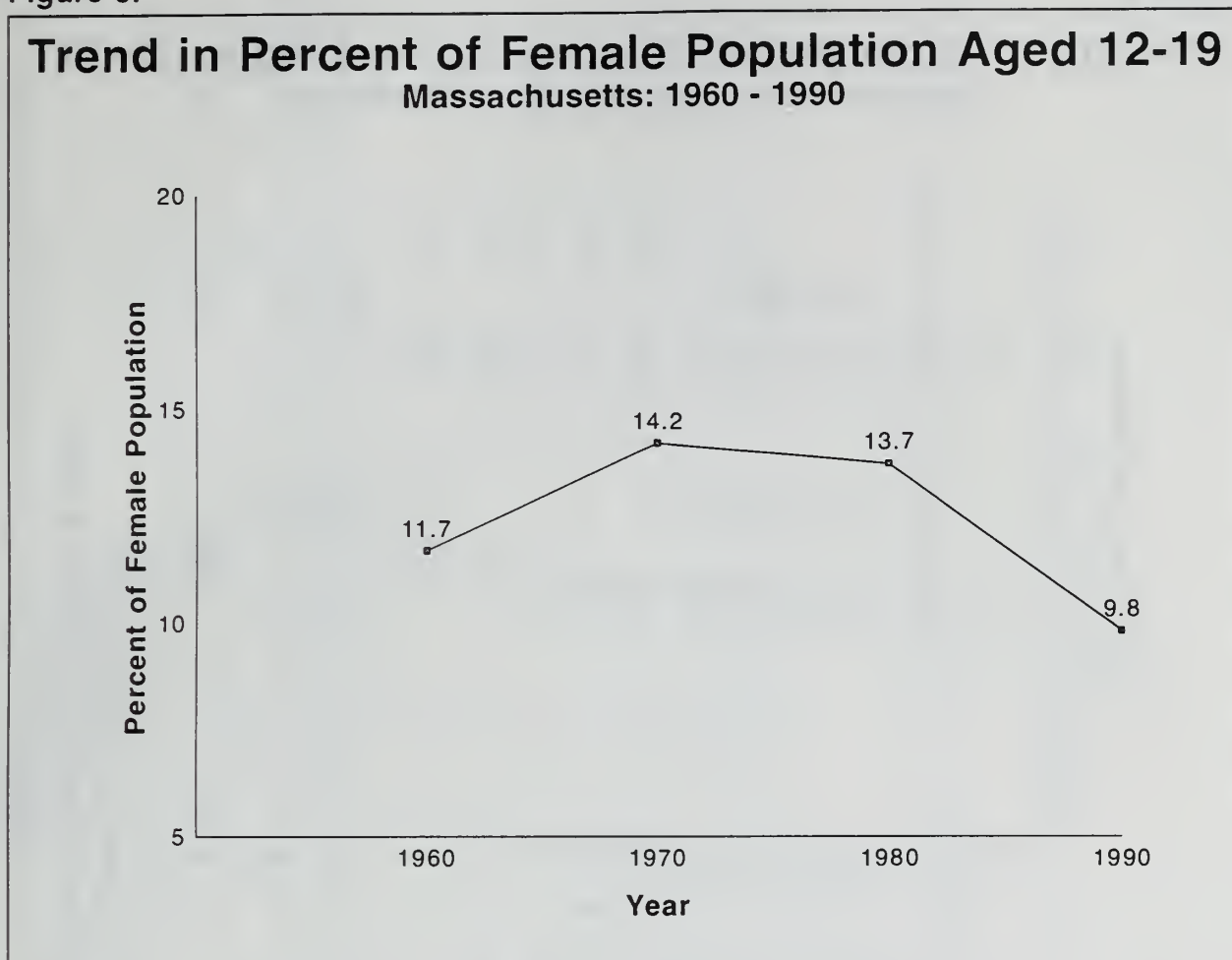
Figure 2.



Sources: Registry of Vital Records and Statistics, MDPH, 1992; National Center for Health Statistics, 1992.

- Over the last dozen years, the proportion of births to teens in Massachusetts has been consistently lower than the proportion in the United States.
- From 1980 to 1992, the percent of births to teens steadily declined in Massachusetts. In the United States, the decline stopped in 1988 and leveled off through 1992. The decline in the proportion of infants born to teenagers reflects, in part, the changing demographics of the State (see Figure 3).

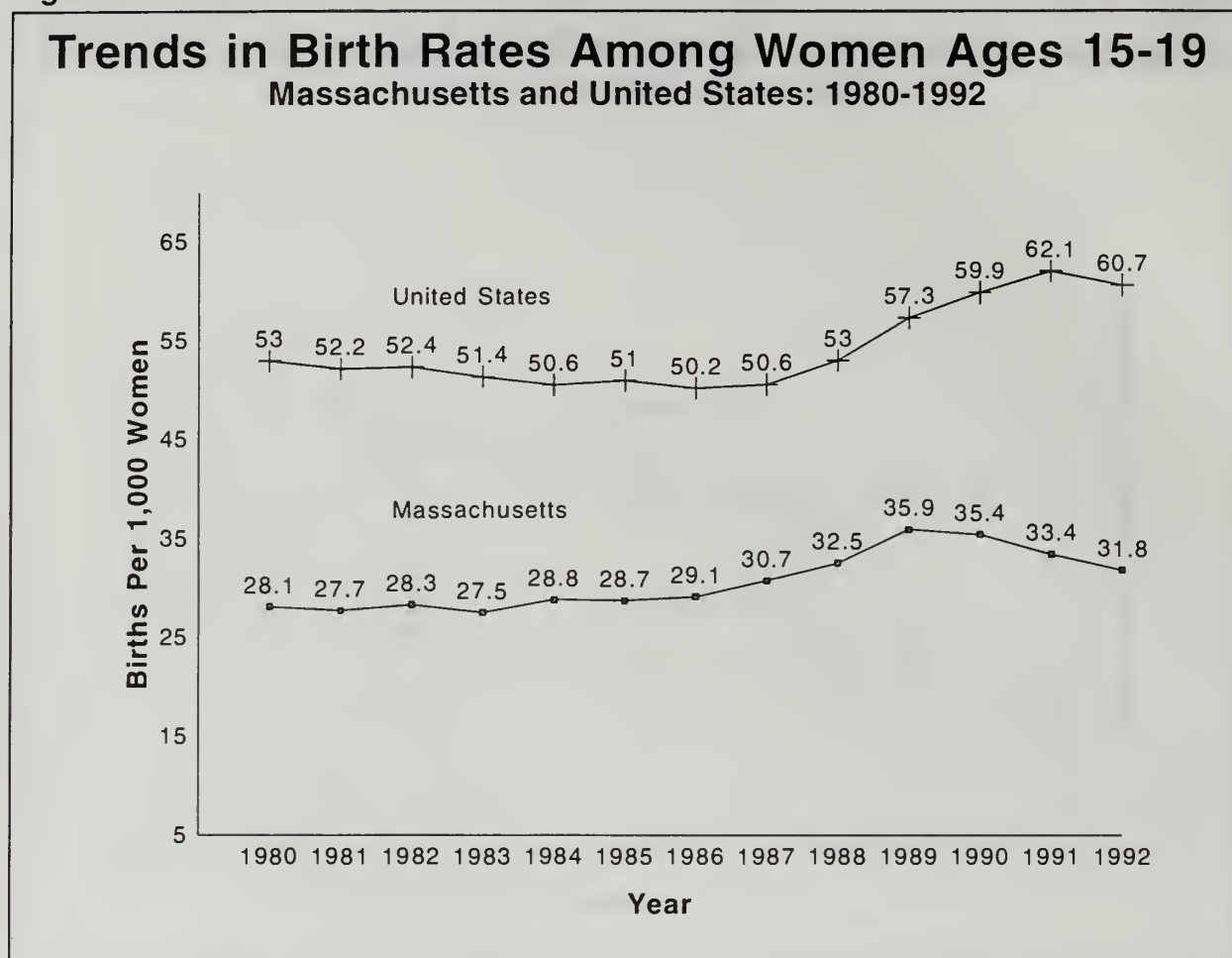
Figure 3.



Source: U.S. Bureau of Census, Decennial Censuses 1960-1980; 1990 MARS File.

- The Massachusetts population is aging. The percent of the female population aged 12 to 19 living in the Commonwealth declined from a high of 14.2% in 1970, to a low of 9.8% in 1990. Over the past two decades, the number of females aged 12 to 19 in Massachusetts declined from 420,353 in 1970, to 305,509 in 1990 (data not shown).

Figure 4.



Sources: Registry of Vital Records and Statistics, MDPH, 1992; National Center for Health and Statistics, 1992.

- Between 1980 and 1992, the teen birth rate in Massachusetts was consistently and substantially lower than the rate for the United States.
- The teen birth rate in Massachusetts declined steadily since 1989, reaching a five year low of 31.8 in 1992.
- The trend in the rate of teen births in Massachusetts is similar to the national trend through 1989. After 1989 the teen birth rate began to decline in Massachusetts, while nationally the rate continued to increase through 1991 and declined in 1992.

NOTE: The birth rate for women ages 15- 19 is calculated by dividing the number of births to these women by the number of women ages 15-19, and multiplying the results by 1000.



**Table 1.**  
**Trend in Teenage Births by Mother's Age**  
**Massachusetts: 1987-1992**

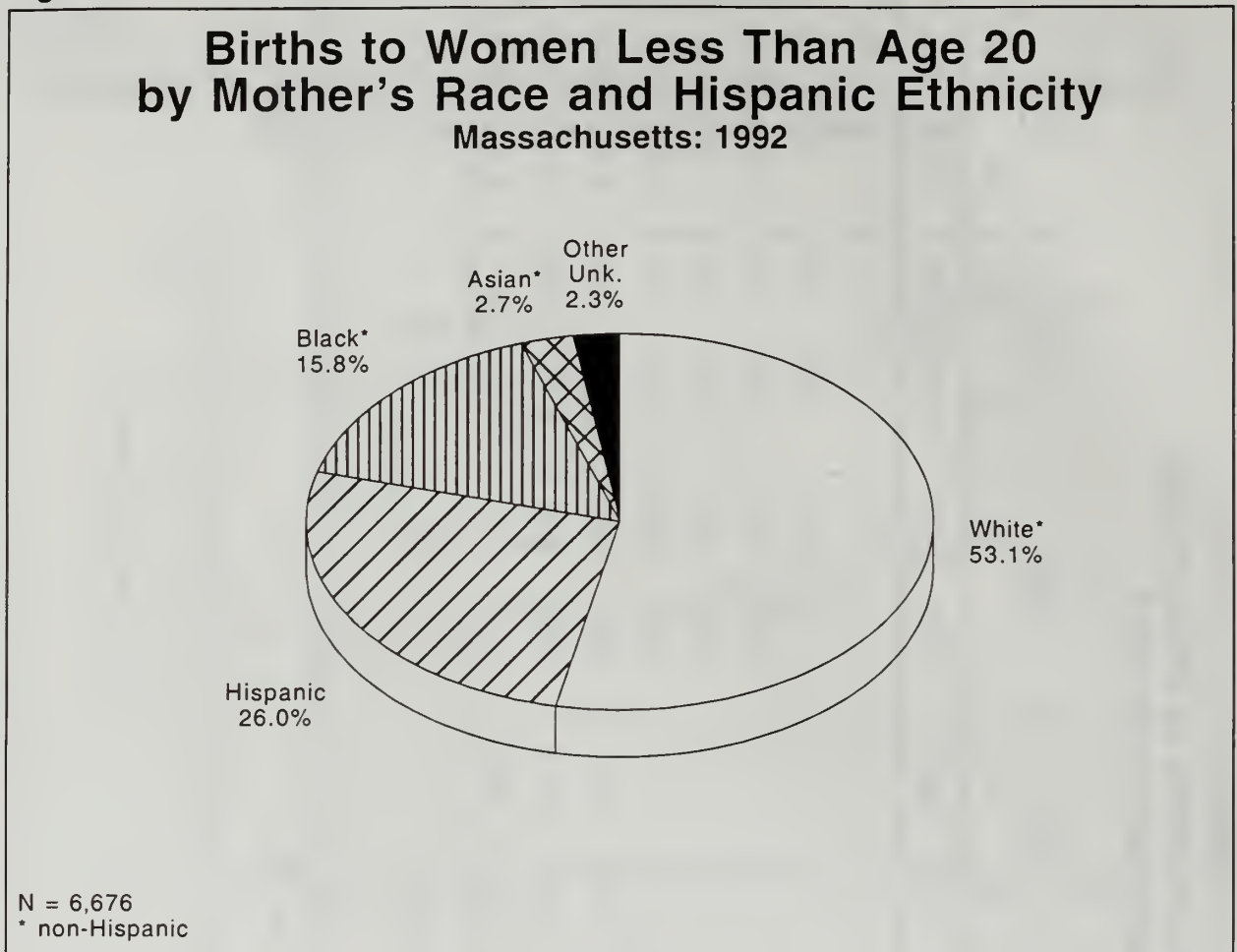
Age	1987		1988		1989		1990		1991		1992	
	N	%	N	%	N	%	N	%	N	%	N	%
12-19	7,019	100.0	7,260	100.0	7,734	100.0	7,382	100.0	7,014	100.0	6,676	100.0
12	2	**	0	0.0	0	0.0	3	**	2	**	3	**
13	15	0.2	27	0.4	19	0.2	18	0.2	18	0.3	15	0.2
14	79	1.1	120	1.7	108	1.4	103	1.4	102	1.5	103	1.5
15	327	4.7	352	4.8	345	4.5	351	4.8	372	5.3	341	5.1
16	796	11.3	732	10.1	853	11.0	810	11.0	758	10.8	782	11.7
17	1,337	19.0	1,450	20.0	1,426	18.4	1,344	18.2	1,391	19.8	1,327	19.9
18	1,965	28.0	2,068	28.5	2,207	28.5	2,014	27.3	1,910	27.2	1,753	26.3
19	2,498	35.6	2,511	34.6	2,776	35.9	2,739	37.1	2,461	35.1	2,352	35.2

Source: Registry of Vital Records and Statistics, MDPH, 1987-1992.

\*\* Calculations based on fewer than five events are excluded.

- In 1992, 61.5% (4,105) of all teen births were to females 18-19 years old, 39.1% (2,568) were to females less than 18 years old, and 1.8% (121) were to females less than 15 years old.
- There was very little change between 1987 and 1992, in the distribution of births among teenagers by age.

Figure 5.



Source: Registry of Vital Records and Statistics, MDPH, 1992.

- In 1992, over half (3,547) of all teen births were to white non-Hispanic mothers; over one quarter (1,737) were to Hispanic mothers; 1,058 were to black non-Hispanic mothers; and 178 of teen births were to Asian mothers.

**Table 2.**  
**Trends in Teenage Births by Mother's Race and Hispanic Ethnicity**  
**Massachusetts: 1987-1992**

Race/ Ethnicity	1987		1988		1989		1990		1991		1992	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>Total</b>	7,019	100.0	7,260	100.0	7,734	100.0	7,382	100.0	7,014	100.0	6,676	100.0
<b>White*</b>	4,423	63.0	4,332	59.7	4,614	59.7	4,200	56.9	3,836	54.7	3,547	53.1
<b>Black*</b>	983	14.0	955	13.2	1,141	14.8	1,121	15.2	1,059	15.1	1,058	15.8
<b>Hispanic</b>	1,202	17.1	1,468	20.2	1,592	20.6	1,714	23.2	1,769	25.2	1,737	26.0
<b>Asian*</b>	267	3.8	304	4.2	241	3.1	233	3.2	194	2.8	178	2.7
<b>Other*</b>	25	0.4	34	0.5	132	1.7	105	1.4	145	2.1	147	2.2
<b>Unknown</b>	119	1.7	167	2.3	14	0.2	9	0.1	11	0.2	9	0.1

Source: Registry of Vital Records and Statistics, MDPH, 1987-1992.

\* non-Hispanic

- Reflecting, in part, the changing demographics in the State, the proportion of teen births among race/ethnicity groups has changed since 1987. The proportion of teen births among whites has declined, while the proportion of births among Hispanic teens has increased. In spite of the growing Asian population, the number and percent of births among Asian teens also has declined.

**Table 3.**  
**Births by Mother's Race, Ethnicity and Age**  
**Massachusetts: 1992**

	Under 18 Years		Under 20 Years		All Ages	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>Total Births</b>	2,571	100.0	6,676	100.0	87,202	100.0
<b>White*</b>	1,176	45.7	3,547	53.1	67,592	77.5
<b>Black*</b>	453	17.6	1,058	15.8	6,675	7.7
West Indian	19	0.7	54	0.8	589	0.7
Haitian	28	1.1	56	0.8	1,005	1.2
Other Black	406	15.8	948	14.2	5,081	5.8
<b>Hispanic</b>	802	31.2	1,737	26.0	8,501	9.7
Puerto Rican	644	25.0	1,345	20.1	4,705	5.4
Dominican	78	3.0	170	2.5	1,396	1.6
Central American	29	1.1	85	1.3	921	1.1
Other Hispanic	51	2.0	137	2.1	1,479	1.7
<b>Asian*</b>	70	2.7	178	2.7	3,277	3.8
Vietnamese	18	0.7	52	0.8	610	0.7
Cambodian	32	1.2	79	1.2	561	0.6
Other SE Asian	14	0.5	29	0.4	153	0.2
Chinese	1	**	5	0.1	983	1.1
Other Asian	5	0.2	13	0.2	970	1.1
<b>Other*</b>	67	2.6	147	2.2	974	1.1
<b>Unknown</b>	3	0.1	9	0.1	183	0.2

Source: Registry of Vital Records and Statistics, MDPH, 1992.

<sup>1</sup> Percentages are based on column totals

\* non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

- The highest number of teen births (3,547) was among white non-Hispanic mothers, followed by Hispanic mothers (1,737) and black mothers (1,058). The race/ethnicity distribution of teen births differed substantially from the distribution among women of all ages. In 1992, 77.5% of all births were to white women, while only 53.1% of teen births were to whites. Among births to women of all ages, 3.8% had Asian mothers, while among teen births, 2.7% had Asian mothers. In contrast, 7.7% and 9.7% of births to mothers of all ages were to black or Hispanic mothers, respectively, while the proportions were 15.8% and 26.0% among teen births, respectively.
- The percentage of births to West Indian, Haitian, Central American, and Vietnamese mothers was relatively constant across age groups, while Other Blacks, Puerto Ricans, Dominicans, and Cambodian births were more prevalent among teens than among births to women of all ages. Chinese and Other Asian births were less prevalent among teens.
- In 1992, 38.5% (2,571) of teen births were among girls under the age of 18. One quarter of these births were to Puerto Rican mothers and 45.7% were to white mothers.



**Table 4.**  
**Births by Mother's Race and Hispanic Ethnicity, Age**  
**and Prenatal Care Payment Source**  
**Massachusetts: 1992**

Mother's Race <sup>1</sup>	Under 18 Years		Under 20 Years		All Ages	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>Total Births<sup>1</sup></b>	2,571	100.0	6,676	100.0	87,202	100.0
<b>Public<sup>3</sup></b>	1,792	69.7	4,836	72.4	23,767	27.3
<b>Private<sup>4</sup></b>	682	26.5	1,583	23.7	59,687	68.4
<b>White*</b>	1,176	100.0	3,547	100.0	67,592	100.0
<b>Public</b>	684	58.2	2,291	64.6	12,450	18.4
<b>Private</b>	440	37.4	1,098	31.0	52,191	77.2
<b>Black*</b>	453	100.0	1,058	100.0	6,675	100.0
<b>Public</b>	294	64.9	742	70.1	3,529	52.9
<b>Private</b>	136	30.0	268	25.3	2,852	42.7
<b>Hispanic</b>	802	100.0	1,737	100.0	8,501	100.0
<b>Public</b>	695	86.7	1,524	87.7	6,007	70.7
<b>Private</b>	87	10.9	171	9.8	2,255	26.5
<b>Asian*</b>	70	100.0	178	100.0	3,277	100.0
<b>Public</b>	62	88.6	155	87.1	1,229	37.5
<b>Private</b>	7	10.0	21	11.8	1,924	58.7
<b>Other*</b>	67	100.0	147	100.0	974	100.0
<b>Public</b>	54	80.6	119	81.0	519	53.3
<b>Private</b>	12	17.9	23	15.6	406	41.7

Source: Registry of Vital Records and Statistics, MDPH, 1992

\* non-Hispanic

<sup>1</sup> Records with unknown Mother's Race/Ethnicity are included in Total Births.

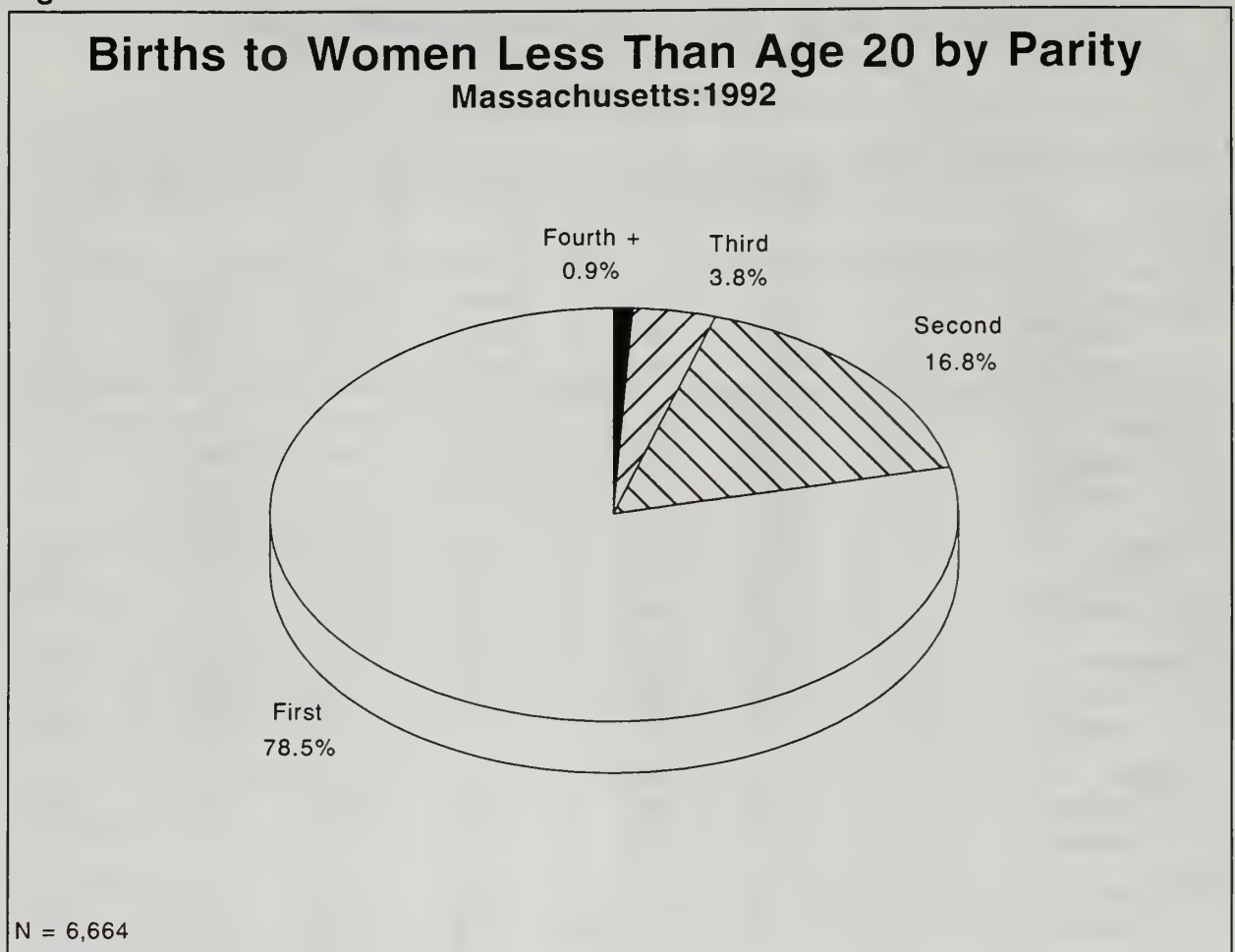
<sup>2</sup> Percentages are based on Race/Ethnicity totals. Percentages for Public and Private do not add up to 100 because total includes Workers Compensation, Self Pay, and Free Care.

<sup>3</sup> Public: Medicaid, Medicare, Healthy Start and Other Government.

<sup>4</sup> Private: Blue Cross/Blue Shield, other commercial insurance, HMO. HMO may include Medicaid recipients in managed care programs.

- Overall, nearly three quarters (72.4%) of all infants of teen mothers (< 20) had their prenatal care paid for by Medicaid, Healthy Start or other public funds, whereas just over one quarter (27.3%) of all infants had publicly-funded prenatal care.
- In 1992, there were substantial differences within race and ethnicity groups in the percent of teens who had publicly-funded prenatal care and the percent of all women who had their prenatal care paid for by public funds. Among white non-Hispanic teens, 64.6% had publicly-funded prenatal care, whereas among all white non-Hispanic women, only 18.4% received publicly-funded prenatal care.
- Hispanic and Asian teens had the highest percentages of publicly-funded prenatal care (87.7% and 87.1% respectively).

Figure 6.



Source: Registry of Vital Records and Statistics, MDPH, 1992.

- In 1992, 21.5% (1,430) of births to women under age 20 were among mothers who had at least one previous live birth.
- 4.7% (312) of teen births were among mothers who had two or more previous live births.

Note: Parity is defined as number of live births including this birth. Percentages are based on births with known parity. The vast majority of second live births were singletons; a very small number of second live births were due to twin births.

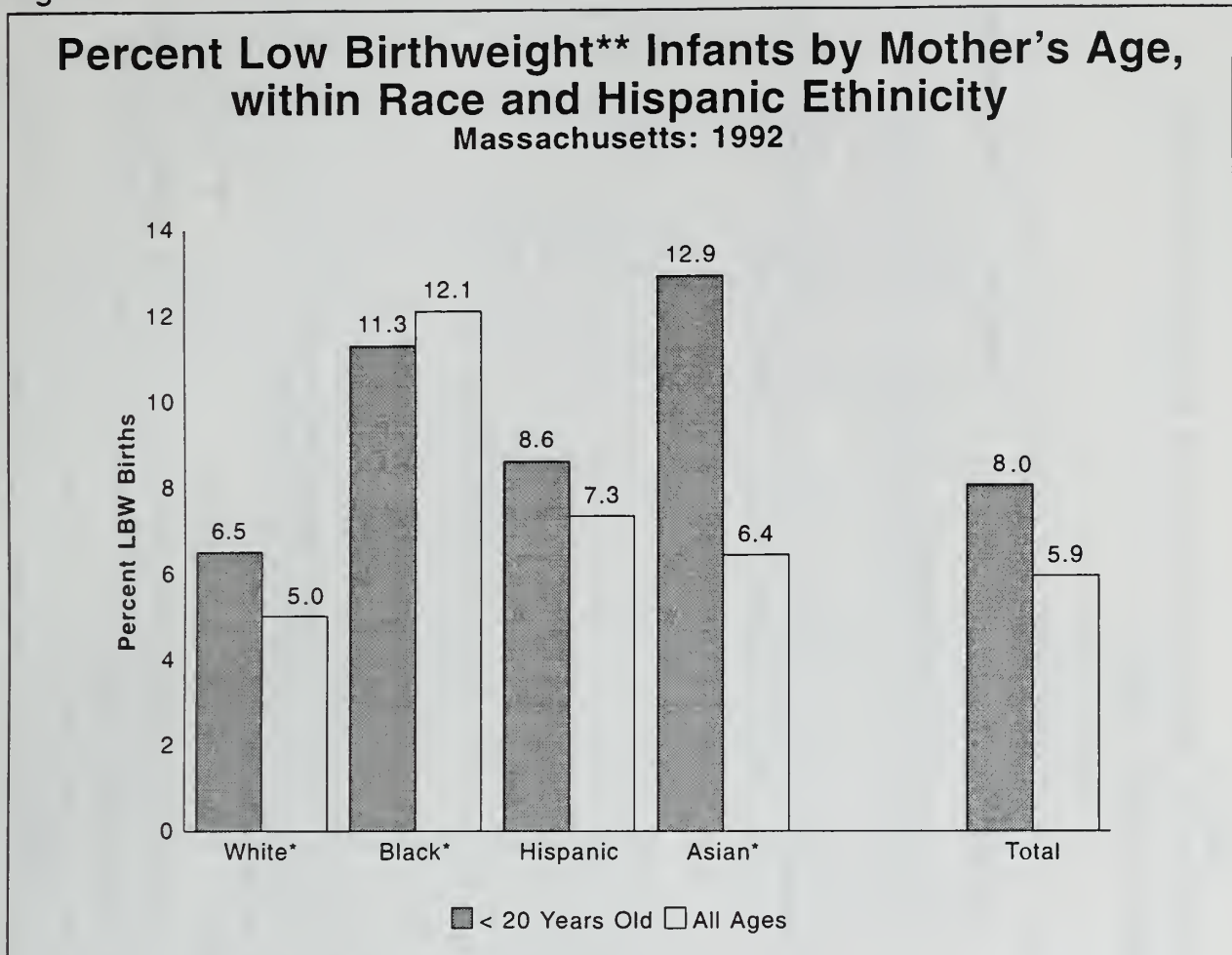
## II.

### *Birthweight, Gestational Age, and Adequacy of Prenatal Care*





Figure 7.



Source: Registry of Vital Records and Statistics, MDPH, 1992.

\* non-Hispanic

\*\* Low birthweight: < 2,500 grams or 5.5 pounds.

- Overall, the percentage of low birthweight infants born to women under age 20 (8.0%) was higher than the percentage of low birthweight infants born to women of all ages (5.9%).
- Within race and Hispanic ethnicity groups, women under age 20 had higher percentages of low birthweight infants than women of all ages, except among black non-Hispanic women.
- Although black teenagers had a slightly lower percentage of low birthweight infants (11.3%) than black women of all ages (12.1%), the percentage of low birthweight infants to black women is considerably higher than the overall percentages of low birthweight among infants of teenagers (8.0%) and women of all ages (5.9%).
- Asian women had the highest percentage of low birthweight births among teenagers (12.9%) in 1992, although the number of low birthweight infants was relatively small (N=23). Due to small numbers, the percentage of low birthweight infants among Asian teenagers has fluctuated widely. It was 8.6% in 1990 and 7.8% in 1991 (data not shown).

**Table 5.**  
**Birthweight and Perinatal Characteristics By Mother's Race and Hispanic Ethnicity**  
**Massachusetts: 1992**

Mother's Race/Ethnicity	Birthweight <sup>1</sup>				Prenatal Care				Breastfeeding <sup>3</sup>			
	Very Low		Low		Adequate Care <sup>2</sup>		First Trimester		C-Section		Breastfeeding <sup>3</sup>	
	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>
All Ages	889	1.0	5,139	5.9	72,102	82.9	75,879	87.2	19,302	22.2	51,327	60.0
< 20 Years	90	1.3	536	8.0	4,226	63.5	4,591	69.0	891	13.4	2,507	38.0
White*	42	1.2	229	6.5	2,359	66.7	2,520	71.2	519	14.7	1,124	32.2
Black*	20	1.9	120	11.3	564	53.5	653	62.0	130	12.3	423	40.2
Hispanic	25	1.4	150	8.6	1,139	65.7	1,236	71.3	219	12.6	856	49.6
Asian*	2	**	23	12.9	73	41.5	82	46.6	9	5.1	39	21.9
Other*	1	**	13	8.8	85	58.2	94	63.9	13	9.0	63	43.2
Unknown	0	0.0	1	**	6	75.0	6	75.0	1	**	2	**

Source: Registry of Vital Records and Statistics, MDPH, 1992.

\* non-Hispanic

\*\* Calculations based on fewer than five events are excluded

<sup>1</sup> Very low birthweight: < 1,500 grams or 3.3 pounds. Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Adequacy of Prenatal Care is determined from an index which combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. See Glossary for more explanation.

<sup>3</sup> Mother was breastfeeding or intending to breastfeed at time the birth certificate was completed.

<sup>4</sup> Percentages are calculated only for cases where information is known.

- Less than two thirds of teenage mothers (63.5%) received adequate prenatal care compared to over 80% of mothers of all ages (82.9%). There was substantial racial variation in the timing of prenatal care registration and the adequacy of prenatal care among teenage mothers.
- Infants of teenage mothers were delivered by Caesarean section less often compared to all infants.
- Teenage mothers breastfed their infants less frequently than mothers of all ages (38.0% and 60.0% respectively).

**Table 6.**  
**Low Birthweight<sup>1</sup> by Mother's Age, Race and Hispanic Ethnicity**  
**Massachusetts: 1992**

Age	Total		White*		Black*		Hispanic		Asian*		Other		Unknown	
	LBW N	% <sup>3</sup>	LBW N	%	LBW N	%	LBW N	%	LBW N	%	LBW N	%	LBW N	%
All Ages <sup>2</sup>	5,139	5.9	3,404	5.0	809	12.1	619	7.3	211	6.4	85	8.7	11	6.0
< 20	536	8.0	229	6.5	120	11.3	150	8.6	23	12.9	13	8.8	1	**
18-19	298	7.3	138	5.8	69	11.4	75	8.0	8	7.4	7	8.8	1	**
<18	238	9.3	91	7.7	51	11.3	75	9.4	15	21.4	6	9.0	0	0.0
15-17	222	9.1	85	7.5	46	10.8	71	9.3	14	22.6	6	9.4	0	0.0
12-14	16	13.2	6	14.6	5	17.9	4	**	1	**	0	0.0	0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1992.

\* non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Low birthweight (LBW) defined as < 2,500 grams or 5.5 pounds.

<sup>2</sup> Excludes records with unknown mother's age.

<sup>3</sup> Percentages are based on number of low birthweight infants divided by the total births in each category.

- The percentage of low birthweight infants increased as the age of the mother decreased: 7.3% among 18-19 year olds, 9.1% among 15-17 year olds, and 13.2% among 12-14 year olds.
- The percentage of low birthweight infants born to young teens (< 18) was higher than among infants of all teens (< 20) across all race groups except among black non-Hispanics.



**Table 7.**  
**Low Birthweight Among Teen Births**  
**by Level of Prenatal Care and Mother's Race and Hispanic Ethnicity**  
**Massachusetts: 1992**

Mother's Race and Ethnicity	Level of Prenatal Care <sup>1</sup>							
	Adequate			Intermediate			Late/None	
	Births	Low Birthweight <sup>2</sup>	N <sup>3</sup>	Births	Low Birthweight <sup>2</sup>	N <sup>3</sup>	Births	Low Birthweight <sup>2</sup>
	N <sup>3</sup>	% <sup>4</sup>		N <sup>3</sup>	% <sup>4</sup>		N <sup>3</sup>	% <sup>4</sup>
<b>Teen Total</b>	4,222	7.9	333	1,918	7.2	139	496	12.3
<b>White*</b>	2,358	6.0	141	953	6.7	64	219	10.5
<b>Black*</b>	563	11.9	67	360	9.2	33	127	15.0
<b>Hispanic</b>	1,137	9.1	104	465	6.5	30	124	12.1
<b>Asian*</b>	73	20.5	15	90	5.6	5	13	**
<b>Other/ Unknown</b>	91	6.6	6	50	14.0	7	13	**

Source: Registry of Vital Records and Statistics, MDPH, 1992

\* non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Adequacy of Prenatal Care is determined by an index which combines trimester of prenatal care registration with the number of prenatal care visits. Adequate care requires first trimester registration and at least 9 prenatal visits. Intermediate care requires second trimester registration and at least 5 prenatal visits. See Glossary for more explanation.

<sup>2</sup> Low Birthweight: < 2,500 grams or 5.5 pounds.

<sup>3</sup> Births with unknown birthweight were excluded.

<sup>4</sup> Percentages calculated on known values of Adequacy of Prenatal Care and Birthweight

■ The percentage of low birthweight infants born to teen mothers who received late or no prenatal care was much higher than the percentage of low birthweight infants whose mothers received adequate prenatal care (12.3% vs 7.9%).

■ The percent of low birthweight infants among teen mothers who received late or no prenatal care was higher than among the adequate or intermediate group regardless of race.



**Table 8.**  
**Teenage Births by Gestational Age, Mother's Race and Hispanic Ethnicity**  
**Massachusetts: 1992**

Gestational Age <sup>1</sup> (weeks completed)	Total		White*		Black*		Hispanic		Asian*		Other		Unknown	
	N	% <sup>2</sup>	N	%	N	%	N	%	N	%	N	%	N	%
< 28	61	0.9	26	0.7	20	1.9	15	0.9	0	0.0	0	0.0	0	0.0
< 37	625	9.4	270	7.6	141	13.3	184	10.6	17	9.6	13	8.8	0	0.0
37-39	2,447	36.7	1,174	33.1	428	40.5	692	39.8	102	57.3	47	32.0	4	**
40-41	3,037	45.5	1,770	49.9	403	38.1	731	42.1	54	30.3	75	51.0	4	**
42+	495	7.4	310	8.7	78	7.4	97	5.6	1	**	9	6.1	0	0.0
Unknown	72	1.1	23	0.6	8	0.8	33	1.9	4	**	3	**	1	**

Source: Registry of Vital Records and Statistics, MDPH, 1992.

\* non-Hispanic

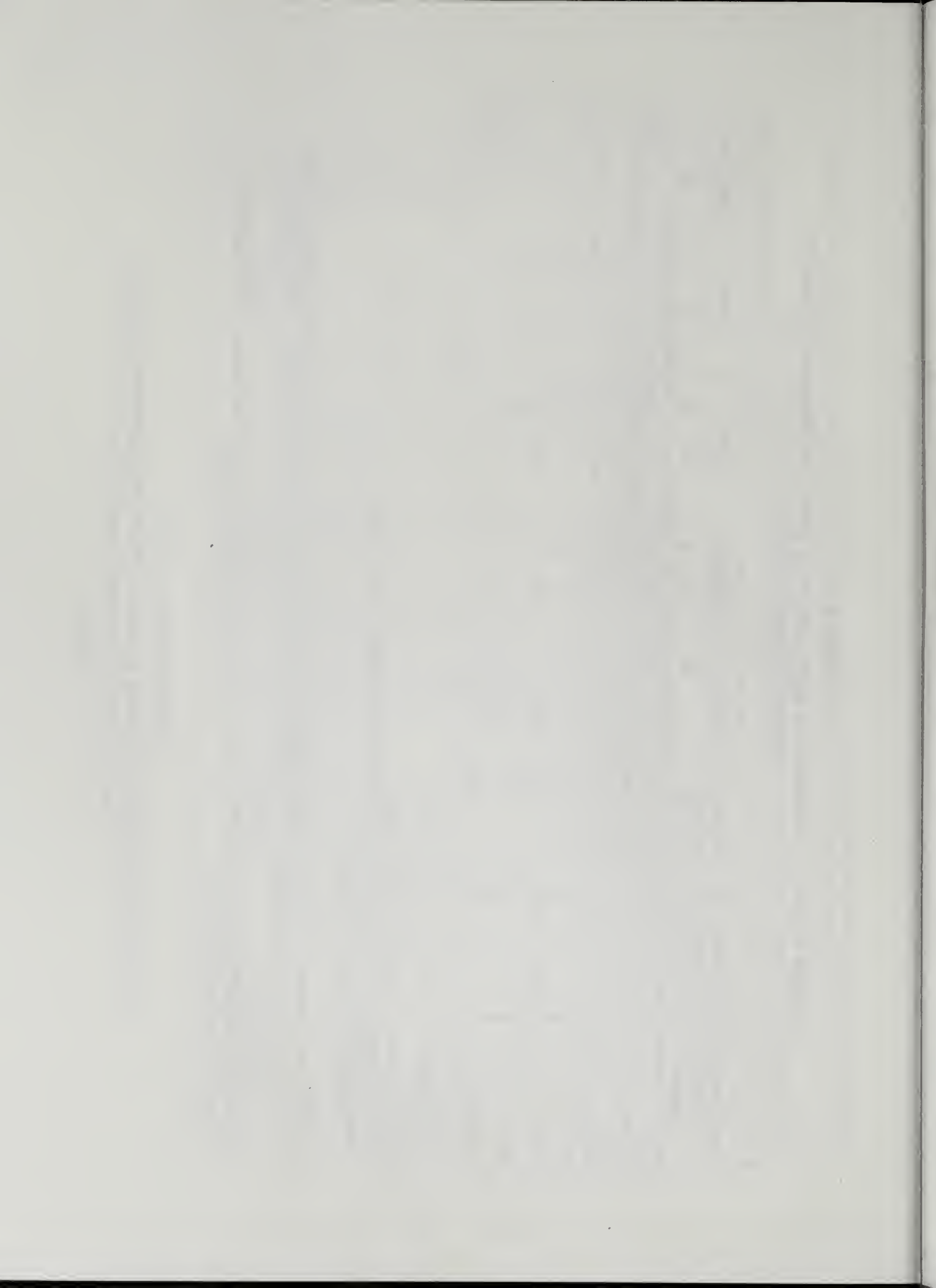
\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Clinical estimate of the total number of weeks gestation completed at delivery.

<sup>2</sup> Percentages are based on column totals.

■ In 1992, teen mothers (< 20) had a higher percentage of prematurely-born infants (9.4%) compared to mothers of all ages (7.2%) (data on all births not shown). Prematurity is defined as birth prior to the completion of 37 weeks gestation.

■ Infants born among teenage white mothers had the lowest percent of prematurity (7.6%), and infants with teenage black mothers had the highest (13.3%).

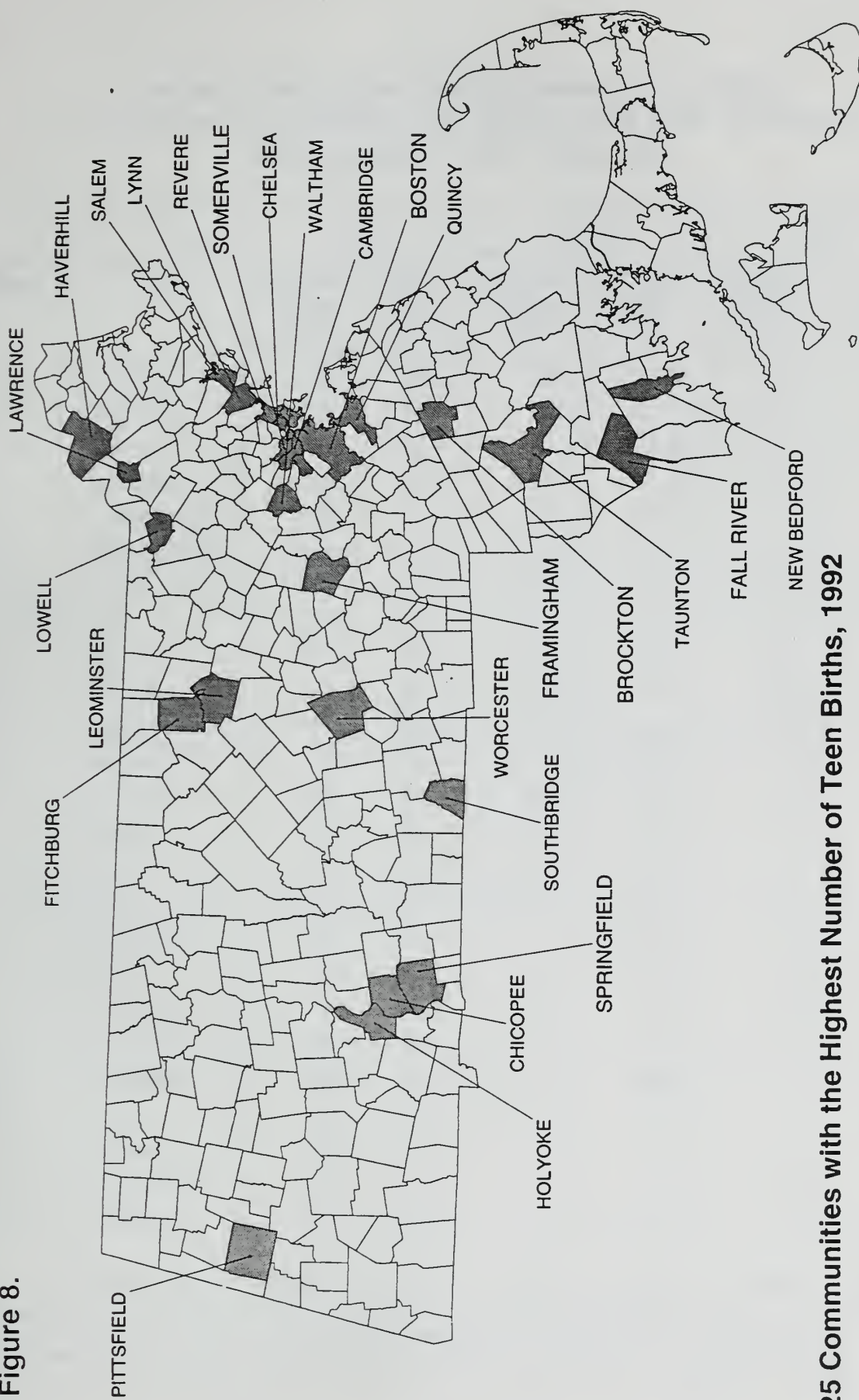


### *III.*

#### *Birth Characteristics for Selected Communities*



Figure 8.

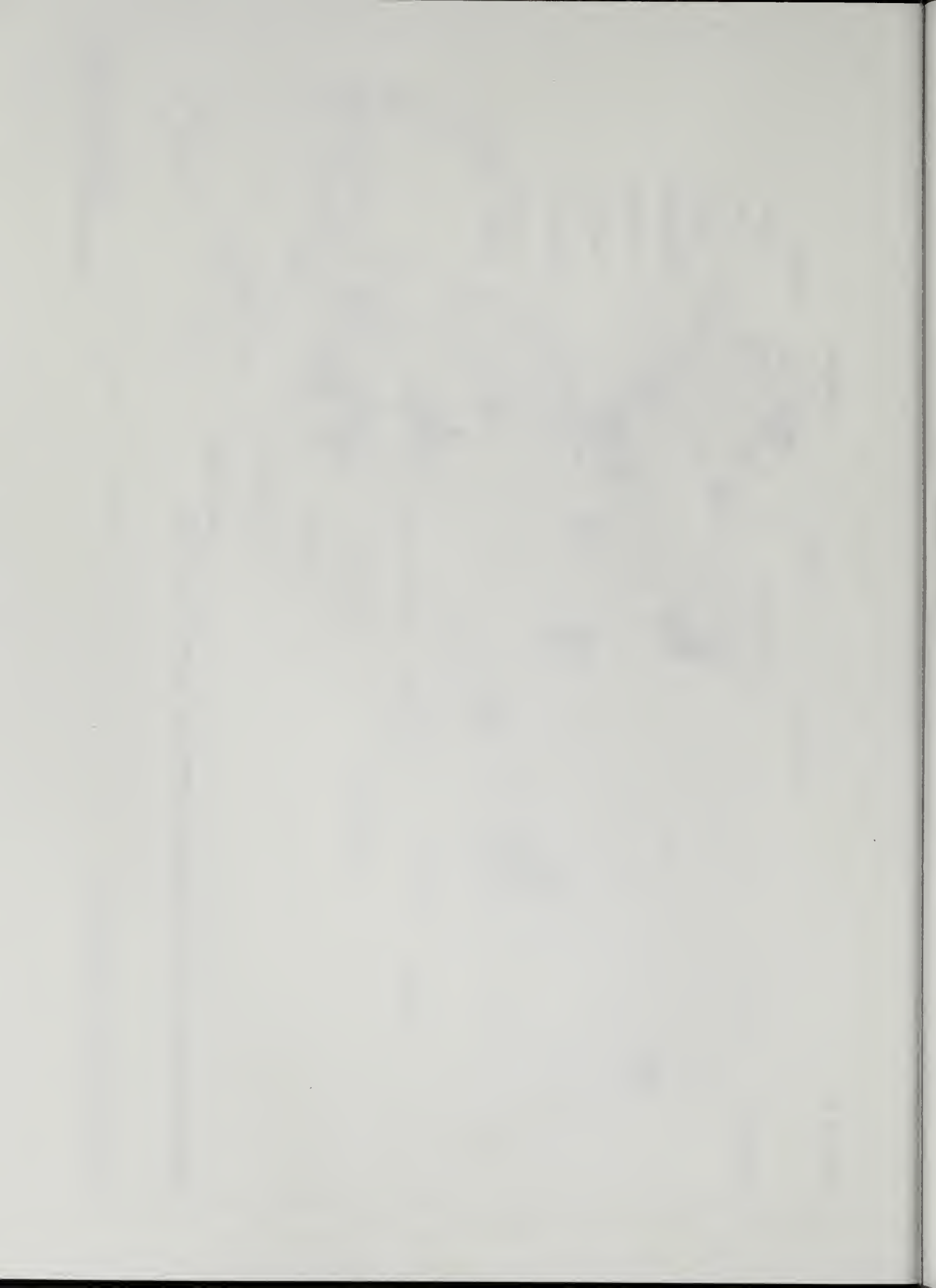


## 25 Communities with the Highest Number of Teen Births, 1992

Source: Registry of Vital Records and Statistics, MDPH

Map Produced by OSE, BFCH  
Massachusetts Department of Public Health





**Table 9.**  
**Trends in Birth Rates Among Women Ages 15-19**  
**for Selected Communities<sup>1</sup>, Ranked by 1992 Teen Birth Rate<sup>2</sup>**  
**Massachusetts: 1992, 1990, 1985**

1992 Rank	Demographic Area	1992		1990		1985	
		Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate
1	Holyoke	185	127.9	203	140.3	182	104.3
2	Lawrence	302	112.5	338	122.8	269	100.6
3	Chelsea	87	97.5	105	114.8	67	67.3
4	Springfield	523	88.8	523	87.9	398	59.8
5	Southbridge	51	88.1	48	82.5	43	66.8
6	New Bedford	261	76.2	263	76.3	218	57.6
7	Lowell	275	71.2	309	81.3	254	61.0
8	Lynn	171	70.3	194	79.4	170	59.2
9	Brockton	221	68.7	216	67.8	240	62.8
10	Fall River	209	65.6	246	76.9	238	67.9
11	Fitchburg	107	60.4	146	82.1	100	46.7
12	Haverhill	98	59.8	94	60.4	80	43.3
13	Worcester	384	57.8	399	58.8	312	42.1
14	Revere	58	54.8	45	42.3	24	16.7
15	Taunton	79	50.2	95	61.0	76	43.1
16	Boston	1,050	48.9	1,137	52.7	1,158	46.7
17	Leominster	51	44.0	42	37.8	62	45.0
18	Salem	55	43.8	45	35.4	39	25.2
19	Chicopee	76	40.7	84	44.9	59	26.7
20	Pittsfield	55	36.0	74	48.3	69	34.8
21	Somerville	65	30.8	64	29.2	83	29.2
22	Quincy	55	24.0	51	22.0	57	19.2
23	Waltham	52	21.5	30	11.7	31	11.1
24	Framingham	47	21.1	44	19.6	48	17.4
25	Cambridge	51	15.6	54	14.9	68	18.0
	Massachusetts	6,555	31.8	7,258	35.1	6,857	28.6

Source: Registry of Vital Records and Statistics, MDPH, 1985, 1990, 1992; 1990 population data are based on the 1990 Census MARS file; the 1992 data are interpolations based on the 1990 Census and the 1995 estimates from the Massachusetts Institute for Social and Economic Research; and the 1985 data are based on the 1980 and 1990 censuses.

<sup>1</sup> 25 Communities with the highest number of 1992 teen births. <sup>2</sup> Rates are per 1,000 females ages 15-19 in each city/town.

**Table 10.**  
**Births by Mother's Age, Race and Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1992**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Boston	All Ages	3,270	3,384	1,741	635	243	9,273 <sup>2</sup>
	< 18	47	259	108	11	19	444
	< 20	159	577	269	24	41	1,070
	20 +	3,111	2,806	1,472	611	202	8,202
Brockton	All Ages	951	361	134	42	168	1,656
	< 18	35	27	18	0	11	91
	< 20	108	52	30	5	29	224
	20 +	843	309	104	37	139	1,432
Cambridge	All Ages	646	195	133	134	21	1,129
	< 18	14	**	9	0	0	27
	< 20	22	13	13	0	**	52
	20 +	624	182	120	134	17	1,077
Chelsea	All Ages	227	38	302	50	10	627
	< 18	**	**	21	**	**	31
	< 20	20	8	54	7	**	90
	20 +	207	30	248	43	9	537
Chicopee	All Ages	666	9	84	9	6	774
	< 18	19	**	18	0	0	38
	< 20	54	**	23	0	0	79
	20 +	612	7	61	9	6	695
Fall River	All Ages	1,282	41	26	42	**	1,394
	< 18	70	**	**	**	0	75
	< 20	191	8	6	6	0	211
	20 +	1,091	33	20	36	**	1,183
Fitchburg	All Ages	417	30	128	34	5	614
	< 18	21	**	17	0	**	43
	< 20	56	11	38	**	**	110
	20 +	361	19	90	31	**	504

**Table 10. (continued)**  
**Births by Mother's Age, Race and Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1992**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Framingham	All Ages	652	56	204	45	6	963
	< 18	7	**	10	0	**	20
	< 20	16	**	28	**	**	48
	20 +	636	54	176	44	5	915
Haverhill	All Ages	883	18	90	17	**	1,012
	< 18	23	**	12	0	0	37
	< 20	78	**	17	0	0	99
	20 +	805	14	73	17	**	913
Holyoke	All Ages	289	23	488	5	5	810
	< 18	11	**	79	0	**	92
	< 20	29	**	155	0	**	190
	20 +	260	19	333	5	**	620
Lawrence	All Ages	529	27	924	31	6	1,517
	< 18	28	**	110	**	**	143
	< 20	66	8	230	**	**	309
	20 +	463	19	694	27	5	1,208
Leominster	All Ages	515	28	101	18	**	665
	< 18	10	**	8	0	0	19
	< 20	34	**	16	**	0	52
	20 +	481	27	85	17	**	613
Lowell	All Ages	1,185	64	344	389	11	1,993 <sup>2</sup>
	< 18	38	**	39	24	0	105
	< 20	127	13	89	53	**	283
	20 +	1,057	51	255	336	10	1,709
Lynn	All Ages	901	178	333	113	10	1,535
	< 18	36	6	30	12	**	86
	< 20	79	23	59	19	**	182
	20 +	822	155	274	94	8	1,353



**Table 10. (continued)**  
**Births by Mother's Age, Race and Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1992**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
New Bedford	All Ages	1,111	75	202	10	121	1,519
	< 18	64	7	25	0	12	108
	< 20	162	18	66	0	21	267
	20 +	949	57	136	10	100	1,252
Pittsfield	All Ages	571	34	12	7	9	633
	< 18	15	**	0	0	0	18
	< 20	43	9	**	0	**	55
	20 +	528	25	10	7	8	578
Quincy	All Ages	982	41	29	141	13	1,206
	< 18	15	**	0	**	**	19
	< 20	43	5	**	5	**	55
	20 +	939	37	28	136	11	1,151
Revere	All Ages	492	39	72	52	7	662
	< 18	13	**	**	**	**	22
	< 20	41	**	7	5	**	59
	20 +	451	35	65	47	5	603
Salem	All Ages	488	17	113	16	**	638
	< 18	6	**	10	**	0	21
	< 20	26	6	21	**	0	55
	20 +	462	11	92	14	**	583
Somerville	All Ages	630	154	162	55	27	1,028
	< 18	5	6	**	0	**	16
	< 20	33	17	15	0	**	67
	20 +	597	137	147	55	25	961
Southbridge	All Ages	218	**	73	7	0	299
	< 18	**	0	11	0	0	15
	< 20	22	0	28	**	0	51
	20 +	196	**	45	6	0	248



**Table 10. (continued)**  
**Births by Mother's Age, Race and Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1992**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Springfield	All Ages	1,226	680	847	62	22	2,837
	< 18	34	67	137	**	0	240
	< 20	108	153	266	7	**	537
	20 +	1,118	527	581	55	19	2,300
Taunton	All Ages	783	27	42	6	18	876
	< 18	18	5	8	**	0	32
	< 20	61	5	12	**	**	81
	20 +	722	22	30	5	16	795
Waltham	All Ages	521	72	109	56	12	770
	< 18	6	**	7	0	0	16
	< 20	33	**	15	0	**	52
	20 +	488	69	94	56	11	718
Worcester	All Ages	1,853	182	520	124	27	2,706
	< 18	71	10	67	**	**	153
	< 20	191	32	149	12	5	389
	20 +	1,662	150	371	112	22	2,317
Massachusetts	All Ages	67,592	6,675	8,501	3,277	1,157	87,202 <sup>2</sup>
	< 18	1,176	453	802	70	70	2,571
	< 20	3,547	1,058	1,737	178	156	6,676
	20 +	64,043	5,616	6,763	3,099	1,001	80,522

Source: Registry of Vital Records and Statistics, MDPH, 1992.

\* non-Hispanic

\*\* Fewer than five observations

<sup>1</sup> 25 communities with the highest number of teen births.

<sup>2</sup> Includes births of unknown maternal age

**Table 11.**  
**Birth Characteristics Among Teen Mothers for Selected Communities<sup>1</sup>**  
**Massachusetts: 1992**

Community	Birthweight		Adequacy of Care <sup>2</sup>			Parity <sup>2</sup>	
	< 2500 g	2500+ g	Adeq	Interm	Inad/ None	One	Two+
	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>
Boston	10.1	89.9	60.6	30.4	9.0	77.4	22.6
Brockton	12.1	87.9	52.3	35.1	12.6	76.8	23.2
Cambridge	13.7	86.3	65.3	26.5	8.2	96.0	**
Chelsea	5.6	94.4	61.1	31.1	7.8	75.6	24.4
Chicopee	2.5	97.5	57.0	40.5	2.5	79.7	20.3
Fall River	5.7	94.3	66.7	30.0	3.3	81.0	19.0
Fitchburg	6.4	93.6	64.2	25.7	10.1	72.5	27.5
Framingham	10.4	89.6	72.9	22.9	4.2	70.8	29.2
Haverhill	8.1	91.9	69.7	27.3	3.0	78.8	21.2
Holyoke	8.5	91.5	46.6	36.5	16.9	68.3	31.7
Lawrence	7.8	92.2	80.5	15.9	3.6	67.0	33.0
Leominster	1.9	98.1	71.2	23.1	5.8	86.5	13.5
Lowell	9.5	90.5	63.3	31.8	4.9	73.5	26.5
Lynn	7.2	92.8	61.9	29.8	8.3	73.5	26.5
New Bedford	8.3	91.7	62.2	30.7	7.1	75.7	24.3
Pittsfield	16.4	83.6	54.5	27.3	18.2	74.5	25.5
Quincy	5.5	94.5	65.5	27.3	7.3	83.6	16.4
Revere	1.7	98.3	57.6	33.9	8.5	84.7	15.3
Salem	16.4	83.6	65.5	29.1	5.5	80.0	20.0
Somerville	10.8	89.2	69.8	15.9	14.3	83.9	16.1
Southbridge	3.9	96.1	64.7	31.4	3.9	70.6	29.4
Springfield	8.7	91.3	56.0	36.0	8.1	71.4	28.6
Taunton	8.6	91.4	64.2	29.6	6.2	80.0	20.0
Waltham	5.9	94.1	54.9	37.3	7.8	92.3	**
Worcester	9.3	90.7	70.4	24.4	5.1	70.4	29.6
Massachusetts	8.0	92.0	63.5	28.9	7.6	78.5	21.5

Source: Registry of Vital Records and Statistics, MDPH, 1992.

\*\* Fewer than five observations.

<sup>1</sup> 25 communities with the highest number of teen births.

<sup>2</sup> See Glossary for definitions.

<sup>3</sup> Percentages are calculated only for cases where information is known.

**Table 12.**  
**Appropriate Grade Level<sup>1</sup> Among Teen Mothers**  
**for Selected Communities<sup>2</sup>**  
**Massachusetts: 1992**

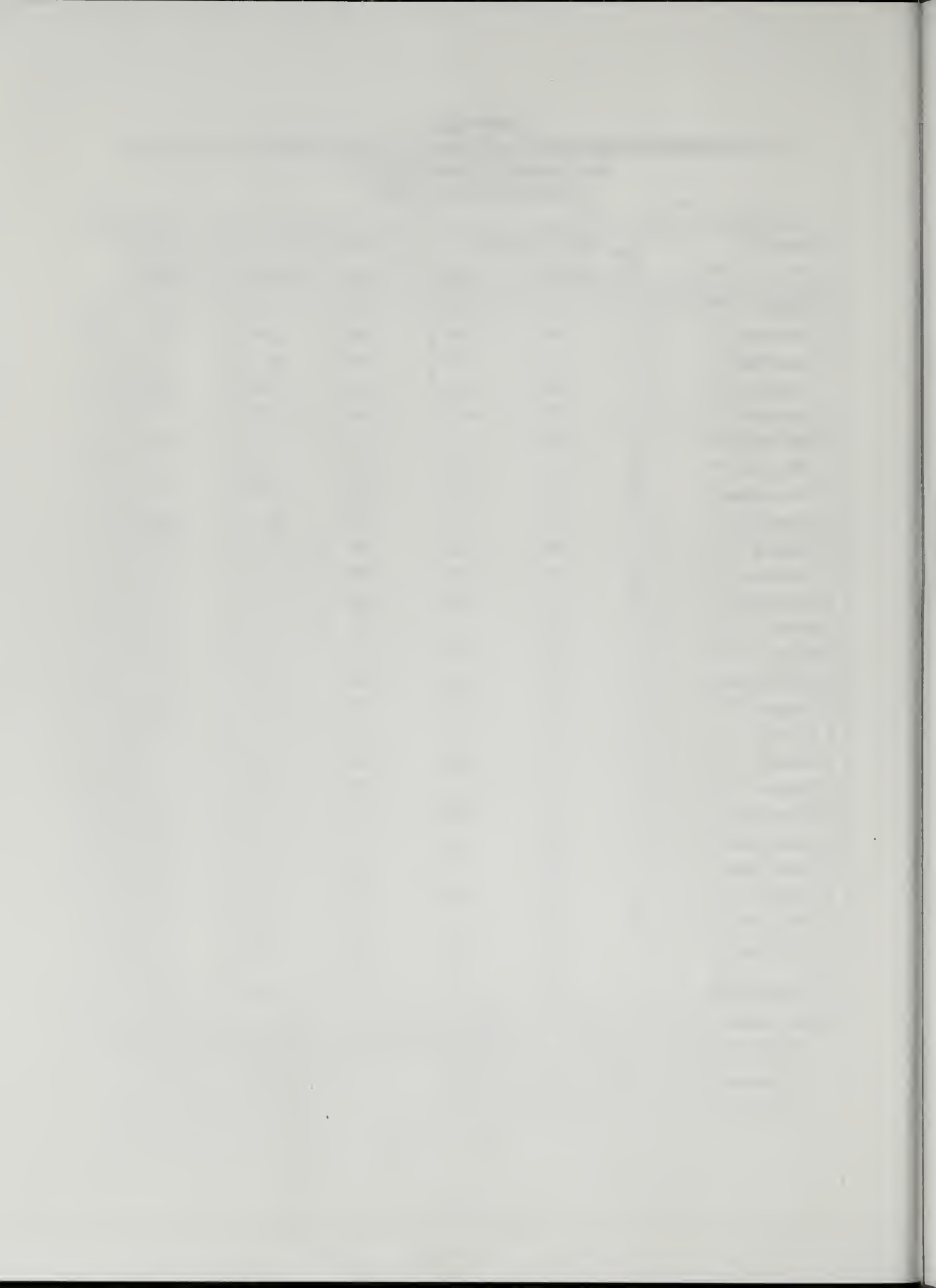
Community	Behind Grade Level <sup>1</sup>		At Grade Level <sup>1</sup>		Total <sup>3</sup>
	Number	Percent	Number	Percent	Number
Boston	290	27.1	778	72.7	1,070
Brockton	74	33.0	150	67.0	224
Cambridge	5	9.6	45	86.5	52
Chelsea	36	40.0	54	60.0	90
Chicopee	27	34.2	52	65.8	79
Fall River	90	42.7	121	57.3	211
Fitchburg	51	46.4	59	53.6	110
Framingham	15	31.3	33	68.8	48
Haverhill	31	31.3	68	68.7	99
Holyoke	99	52.1	90	47.4	190
Lawrence	133	43.0	175	56.6	309
Leominster	13	25.0	39	75.0	52
Lowell	127	44.9	155	54.8	283
Lynn	50	27.5	131	72.0	182
New Bedford	104	39.0	163	61.0	267
Pittsfield	13	23.6	42	76.4	55
Quincy	13	23.6	40	72.7	55
Revere	21	35.6	38	64.4	59
Salem	16	29.1	39	70.9	55
Somerville	20	29.9	45	67.2	67
Southbridge	20	39.2	31	60.8	51
Springfield	202	37.6	334	62.2	537
Taunton	24	29.6	57	70.4	81
Waltham	12	23.1	40	76.9	52
Worcester	157	40.4	232	59.6	389
Massachusetts	2,084	31.2	4,577	68.6	6,676

Source: Registry of Vital Records and Statistics, MDPH, 1992.

<sup>1</sup> Behind grade level defined as being one or more grades behind the maximum expected age for a grade at the time of delivery. See Glossary for further explanation.

<sup>2</sup> 25 communities with the highest number of teen births.

<sup>3</sup> Total includes records with unknown mother's education.



#### *IV.*

### *Birth Characteristics for all 351 Communities and the 27 Community Health Network Areas*





**Table 13.**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Abington	224	1	13	7	6
Acton	265	2	4	**	**
Acushnet	99	2	4	**	**
Adams	117	5	10	9	8
Agawam	337	5	17	11	10
Alford	3	0	0	0	0
Amesbury	253	5	18	16	15
Amherst	169	2	6	**	**
Andover	372	2	6	**	**
Arlington	555	3	9	**	**
Ashburnham	79	4	9	5	**
Ashby	46	1	6	5	**
Ashfield	26	0	1	0	**
Ashland	246	1	5	**	**
Athol	154	6	19	13	14
Attleboro	682	11	41	29	21
Auburn	184	3	11	9	**
Avon	44	0	1	0	0
Ayer	239	5	17	11	15
Barnstable	550	15	27	22	24
Barre	65	0	4	**	**
Becket	26	1	1	0	0
Bedford	238	0	8	6	6

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Belchertown	194	2	3	**	0
Bellingham	244	4	15	9	5
Belmont	278	0	0	0	0
Berkley	73	0	4	**	**
Berlin	31	0	1	**	0
Bernardston	18	0	0	0	0
Beverly	538	7	18	13	13
Billerica	558	4	11	8	**
Blackstone	140	8	14	9	6
Blandford	9	0	0	0	0
Bolton	28	0	0	0	0
Boston	9,273	444	1,070	725	729
Bourne	250	6	11	10	10
Boxborough	74	0	1	**	**
Boxford	84	0	0	0	0
Boylston	55	1	1	**	**
Braintree	377	1	11	5	7
Brewster	110	2	7	6	**
Bridgewater	277	6	12	9	**
Brimfield	38	1	1	**	**
Brockton	1,656	91	224	132	172
Brookfield	47	0	2	**	**
Brookline	584	2	9	5	6

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Buckland	17	2	3	**	**
Burlington	282	1	7	5	**
Cambridge	1,129	27	52	34	32
Canton	226	2	3	**	**
Carlisle	51	0	0	0	0
Carver	149	4	9	**	**
Charlemont	11	1	3	**	**
Charlton	163	3	8	7	**
Chatham	44	1	3	**	**
Chelmsford	444	2	9	8	8
Chelsea	627	31	90	58	78
Cheshire	34	0	0	0	0
Chester	17	1	1	0	**
Chesterfield	12	0	1	0	0
Chicopee	774	38	79	56	59
Chilmark	5	0	0	0	0
Clarksburg	13	0	3	**	**
Clinton	220	9	22	17	15
Cohasset	87	1	1	**	**
Colrain	29	2	2	**	0
Concord	177	1	1	0	0
Conway	21	0	0	0	0
Cummington	16	0	0	0	0

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Dalton	72	1	6	5	**
Danvers	299	1	4	**	**
Dartmouth	221	3	13	8	8
Dedham	315	0	5	**	**
Deerfield	59	2	3	**	**
Dennis	126	3	12	8	10
Dighton	69	0	1	**	**
Douglas	88	0	5	**	**
Dover	61	0	0	0	0
Dracut	443	2	14	11	5
Dudley	127	4	9	7	**
Dunstable	37	1	1	**	**
Duxbury	147	1	1	**	0
East Bridgewater	173	3	14	11	6
East Brookfield	31	2	2	**	0
East Longmeadow	142	2	5	**	**
Eastham	45	1	1	**	0
Easthampton	208	3	16	11	15
Easton	278	2	9	**	**
Edgartown	43	2	8	8	7
Egremont	16	0	1	0	**
Erving	11	1	2	**	**
Essex	38	0	0	0	0



**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Everett	595	13	30	18	19
Fairhaven	176	7	17	8	7
Fall River	1,394	75	211	148	168
Falmouth	349	10	28	25	22
Fitchburg	614	43	110	75	92
Florida	9	1	1	**	0
Foxborough	199	3	7	6	**
Framingham	963	20	48	43	35
Franklin	403	3	8	5	**
Freetown	80	0	1	**	0
Gardner	281	10	34	25	30
Gay Head	2	0	0	0	0
Georgetown	97	1	3	**	**
Gill	13	0	0	0	0
Gloucester	434	8	23	14	12
Goshen	8	0	0	0	0
Gosnold	2	0	0	0	0
Grafton	197	1	5	5	0
Granby	71	2	3	**	**
Granville	15	0	1	**	0
Great Barrington	77	1	3	**	**
Greenfield	233	11	28	22	19
Groton	124	0	0	0	0

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Groveland	67	0	0	0	0
Hadley	34	0	1	**	**
Halifax	99	3	6	6	**
Hamilton	106	0	0	0	0
Hampden	35	1	2	**	**
Hancock	8	0	0	0	0
Hanover	156	0	2	**	0
Hanson	146	3	4	**	**
Hardwick	24	0	2	**	**
Harvard	121	2	5	**	5
Harwich	94	0	1	0	0
Hatfield	34	0	0	0	0
Haverhill	1,012	37	99	71	75
Hawley	3	0	0	0	0
Heath	8	0	2	**	**
Hingham	216	0	1	**	0
Hinsdale	19	1	1	0	**
Holbrook	139	3	8	6	**
Holden	159	0	4	**	**
Holland	39	2	4	**	**
Holliston	157	1	3	**	**
Holyoke	810	92	190	106	179
Hopedale	97	0	0	0	0

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Hopkinton	185	1	4	**	**
Hubbardston	61	1	4	**	**
Hudson	278	6	19	18	10
Hull	186	1	7	6	6
Huntington	26	0	1	**	**
Ipswich	158	1	4	**	**
Kingston	158	1	5	**	**
Lakeville	122	1	7	6	**
Lancaster	61	0	2	**	**
Lanesborough	30	0	0	0	0
Lawrence	1,517	143	309	257	272
Lee	61	0	4	**	**
Leicester	135	5	12	8	**
Lenox	44	0	1	**	**
Leominster	665	19	52	38	33
Leverett	18	0	0	0	0
Lexington	256	1	3	**	**
Leyden	6	0	0	0	0
Lincoln	50	0	0	0	0
Littleton	101	1	2	0	**
Longmeadow	127	0	2	**	**
Lowell	1,993	105	283	184	234
Ludlow	216	0	9	8	8

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Lunenburg	96	3	7	**	5
Lynn	1,535	86	182	118	151
Lynnfield	112	0	3	**	**
Malden	863	16	37	19	28
Manchester	57	0	0	0	0
Mansfield	354	2	7	6	**
Marblehead	252	1	1	0	**
Marion	55	1	3	**	**
Marlborough	604	7	22	16	14
Marshfield	344	2	15	14	8
Mashpee	180	1	10	9	7
Mattapoissett	71	1	4	**	**
Maynard	185	2	7	5	**
Medfield	156	0	2	**	**
Medford	730	8	22	14	12
Medway	174	1	4	**	**
Melrose	342	1	6	5	**
Mendon	50	0	0	0	0
Merrimac	67	1	4	**	**
Methuen	581	10	38	29	23
Middleborough	253	3	16	13	11
Middlefield	6	0	0	0	0
Middleton	88	1	1	**	0

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Milford	367	7	19	7	15
Millbury	183	4	10	8	**
Millis	132	2	3	**	**
Millville	44	1	3	**	**
Milton	280	0	3	**	**
Monroe	0	0	0	0	0
Monson	105	3	7	**	**
Montague	97	1	10	5	8
Monterey	14	0	0	0	0
Montgomery	9	0	0	0	0
Mt. Washington	2	0	0	0	0
Nahant	40	1	1	0	0
Nantucket	88	1	4	0	**
Natick	426	2	8	7	5
Needham	361	1	3	**	0
New Ashford	3	0	0	0	0
New Bedford	1,519	108	267	187	206
New Braintree	8	0	0	0	0
New Marlborough	12	0	0	0	0
New Salem	4	0	0	0	0
Newbury	87	0	4	**	**
Newburyport	214	6	16	11	11
Newton	893	1	6	**	5



**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Norfolk	141	0	0	0	0
North Adams	219	12	40	32	34
North Andover	319	4	8	6	**
North Attleborough	401	4	13	6	6
North Brookfield	77	7	10	6	7
North Reading	176	2	3	**	**
Northampton	272	7	15	9	11
Northborough	176	0	1	**	**
Northbridge	197	7	16	13	7
Northfield	25	0	0	0	0
Norton	243	5	12	8	**
Norwell	124	0	0	0	0
Norwood	378	3	9	**	6
Oak Bluffs	41	0	2	**	**
Oakham	30	0	0	0	0
Orange	106	7	14	11	9
Orleans	34	0	2	**	**
Otis	13	1	1	**	**
Oxford	199	4	11	7	7
Palmer	170	6	14	12	8
Paxton	45	0	0	0	0
Peabody	680	7	29	19	22
Pelham	10	0	0	0	0

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Pembroke	251	3	10	7	**
Pepperell	185	4	6	**	**
Peru	16	0	0	0	0
Petersham	9	0	1	**	0
Phillipston	19	2	4	**	**
Pittsfield	633	18	55	40	40
Plainfield	6	0	0	0	0
Plainville	103	1	3	**	**
Plymouth	776	13	33	21	21
Plympton	29	0	0	0	0
Princeton	41	1	1	**	**
Provincetown	17	0	0	0	0
Quincy	1,206	19	55	38	37
Randolph	431	5	23	18	15
Raynham	119	0	5	**	**
Reading	283	0	2	**	**
Rehoboth	95	2	2	**	0
Revere	662	22	59	34	40
Richmond	16	0	0	0	0
Rochester	46	1	3	**	**
Rockland	237	2	15	11	8
Rockport	80	1	2	0	**
Rowe	3	0	0	0	0

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Rowley	59	0	2	0	**
Royalston	10	0	0	0	0
Russell	24	0	1	0	**
Rutland	72	2	4	**	**
Salem	638	21	55	38	36
Salisbury	113	4	5	5	**
Sandisfield	6	1	1	0	**
Sandwich	199	5	9	5	6
Saugus	305	4	7	6	**
Savoy	9	1	1	**	**
Scituate	200	0	1	**	0
Seekonk	149	1	4	**	**
Sharon	209	1	2	**	0
Sheffield	36	2	2	**	**
Shelburne	17	0	0	0	0
Sherborn	49	0	0	0	0
Shirley	90	2	9	7	6
Shrewsbury	354	2	9	7	5
Shutesbury	22	0	0	0	0
Somerset	132	3	7	6	**
Somerville	1,028	16	67	49	49
South Hadley	167	3	5	**	**
Southampton	59	0	1	**	0

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Southborough	115	0	1	**	0
Southbridge	299	15	51	36	42
Southwick	91	2	4	**	**
Spencer	171	4	16	13	10
Springfield	2,837	240	537	346	464
Sterling	103	0	4	**	**
Stockbridge	13	0	1	0	**
Stoneham	244	1	6	**	**
Stoughton	362	8	18	13	13
Stow	82	0	0	0	0
Sturbridge	102	1	3	**	**
Sudbury	201	1	3	**	0
Sunderland	59	2	4	**	**
Sutton	104	1	3	**	**
Swampscott	159	0	4	**	**
Swansea	146	0	5	5	**
Taunton	876	32	81	57	51
Templeton	70	0	2	**	**
Tewksbury	468	7	16	7	6
Tisbury	43	0	3	**	**
Tolland	5	0	0	0	0
Topsfield	68	0	0	0	0
Townsend	118	3	7	**	**



**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Truro	18	0	0	0	0
Tyngsborough	138	0	7	5	5
Tyringham	3	0	0	0	0
Upton	96	0	2	**	**
Uxbridge	176	0	8	6	5
Wakefield	321	1	7	5	**
Wales	20	1	1	**	0
Walpole	271	0	3	**	**
Waltham	770	16	52	30	34
Ware	121	5	15	12	11
Wareham	302	13	28	19	19
Warren	63	2	4	0	**
Warwick	6	2	2	0	**
Washington	3	0	0	0	0
Watertown	390	1	7	**	7
Wayland	164	0	0	0	0
Webster	243	5	17	12	13
Wellesley	315	0	0	0	0
Wellfleet	17	0	1	**	0
Wendell	7	1	1	0	**
Wenham	34	0	0	0	0
West Boylston	58	0	1	0	0
West Bridgewater	76	0	4	**	**



**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
West Brookfield	28	0	0	0	0
West Newbury	46	1	2	**	**
West Springfield	413	15	44	33	36
West Stockbridge	15	0	0	0	0
West Tisbury	21	0	0	0	0
Westborough	189	3	5	**	**
Westfield	491	14	42	31	32
Westford	271	0	4	**	**
Westhampton	16	0	0	0	0
Westminster	71	3	4	**	**
Weston	98	0	0	0	0
Westport	129	5	9	5	6
Westwood	144	0	2	**	0
Weymouth	778	13	25	18	6
Whately	21	0	1	**	**
Whitman	204	2	6	5	**
Wilbraham	105	1	2	**	0
Williamsburg	19	1	2	0	**
Williamstown	65	0	1	**	**
Wilmington	301	4	7	**	**
Winchendon	147	2	18	10	13
Winchester	225	1	4	**	**
Windsor	9	0	0	0	0

**Table 13. (continued)**  
**Number of Births by Mother's Age and**  
**Prenatal Care Characteristics.**  
**351 Massachusetts Communities: 1992**

Community	All ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Winthrop	197	2	12	8	8
Woburn	569	6	17	15	10
Worcester	2,706	153	389	287	305
Worthington	14	0	0	0	0
Wrentham	134	0	0	0	0
Yarmouth	220	5	18	10	16
Massachusetts	87,202	2,571	6,676	4,591	4,836

Source: Registry of Vital Records and Statistics, MDPH, 1992.

\*\* Fewer than five observation.

**Table 14.**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1992**

Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
1 Pittsfield Area	1,616	45	133	100	98
2 Greenfield Area	1,032	40	100	72	68
3 Holyoke/Chicopee/Northampton Area	3,449	162	362	226	305
4 Springfield Area	4,640	280	657	431	552
5 Southbridge Area	1,752	54	146	103	100
6 Milford Area	2,726	32	100	63	56
7 Framingham/Marlborough Area	4,339	46	132	110	81
8 Worcester Area	4,076	169	442	328	323
9 Fitchburg/Gardner Area	3,659	114	329	228	242
10 Lowell Area	4,352	121	345	226	263
11 Lawrence Area	2,877	160	362	297	300
12 Haverhill Area	2,099	55	153	109	112
13 Beverly/Gloucester Area	1,513	17	47	29	29
14 Lynn/Salem Area	3,908	121	283	186	216
15 Woburn Area	4,067	22	81	55	44
16 Medford/Malden Area	3,674	92	250	151	185
17 Cambridge/Somerville Area	3,380	47	135	90	91
18 Newton/Waltham Area	3,541	20	77	44	49
19 City of Boston	9,273	444	1,070	725	729
20 Quincy Area	3,815	46	137	94	74

**Table 14. (continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1992**

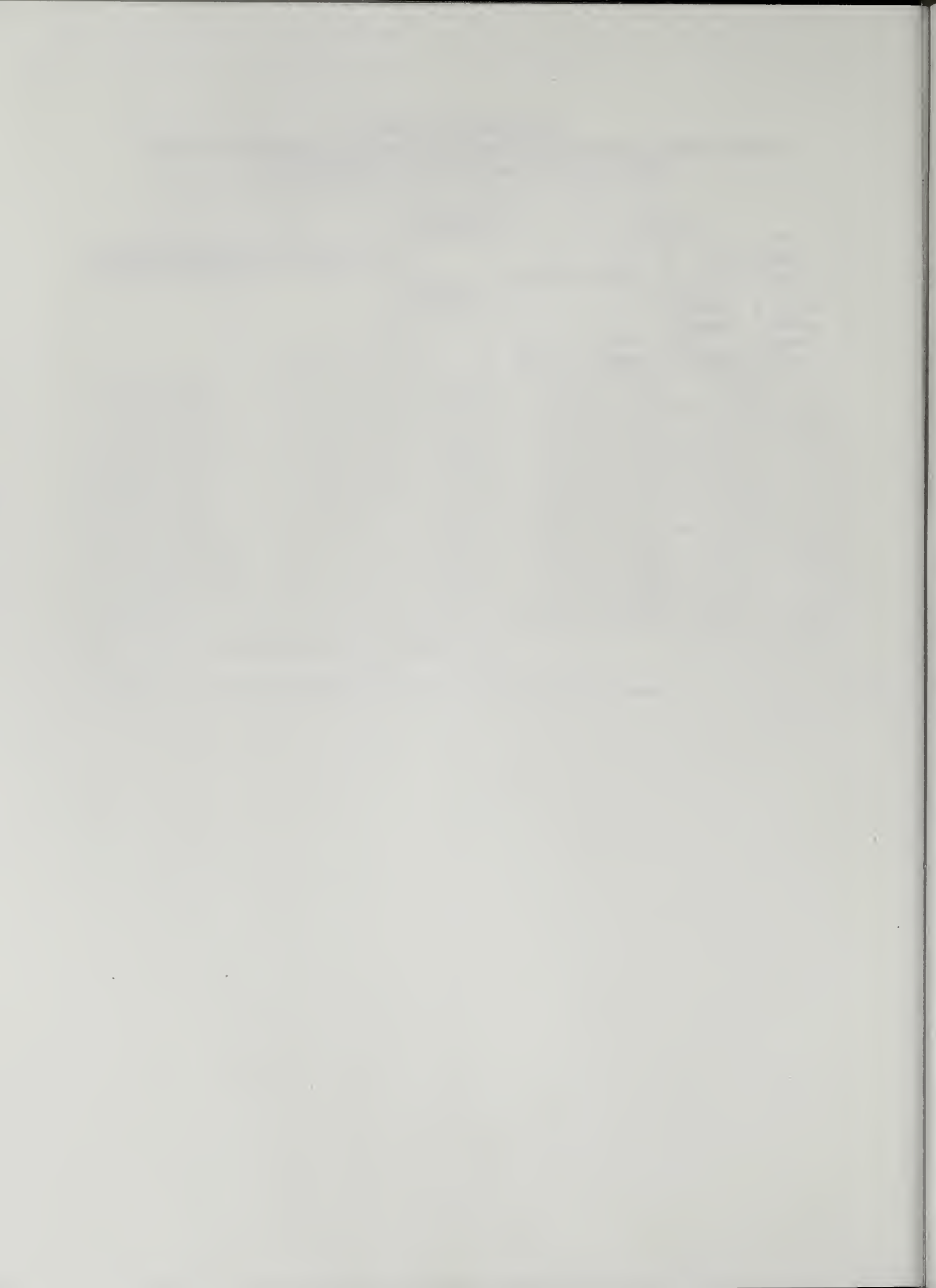
Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
21 Attleboro Area	2,191	27	85	59	38
22 Brockton Area	3,294	113	301	183	208
23 Plymouth Area	3,305	34	110	81	56
24 Taunton Area	1,756	39	120	90	74
25 Fall River Area	1,801	83	232	164	179
26 New Bedford Area	2,569	136	340	234	247
27 Cape/Islands Area	2,498	52	147	113	117
Massachusetts	87,202	2,571	6,676	4,591	4,836

Source: Registry of Vital Records and Statistics, MDPH, 1992.

<sup>1</sup> See Appendix for Community Health Network Area definition and city/town groupings.

## *Appendix*





# Glossary

**Adequacy of prenatal care:** Adequacy of prenatal care is calculated from information reported by the birth hospital. The index of Adequacy of Prenatal Care (based on the Kessner Index) has three categories (adequate, intermediate, inadequate/none) based on the trimester in which prenatal care began and the number of prenatal visits. The general classification scheme is:

<u>Category</u>	<u>Trimester Care Began</u>	<u>Number of Visits</u>
Adequate	1	9 or more
Intermediate	1	5-8
	2	5 or more
Inadequate/None	1	1-4
	2	1-4
	3	1 or more

The classification is adjusted for gestational age to allow for proper classification of premature infants.

**Birth Rate:** see Teen Birth Rate.

**Birthweight Categories:** Birthweight is the weight of an infant recorded at the time of delivery.

**Normal Birthweight (NBW):** An infant's weight of 2,500 grams (5.5 pounds) or more

**Low Birthweight (LBW):** An infant's weight of less than 2,500 grams (5.5 pounds)

**Very Low Birthweight (VLBW):** An infant's weight of less than 1,500 grams (3.3 pounds)

**Education:** Education is self-reported on the birth certificate by the mother and indicates the highest grade or total number of years of schooling she completed.

**Age-Appropriate Grade Level:** Refers to the maximum expected age of a student in a particular school grade. Teen mothers were classified as being at least one grade behind if they were 2 or more years older than the maximum expected age for the reported grade level. For example, if a teen is 16 years old and reports she has completed the 8th grade, then she is at least one year behind the expected age for that grade. The following age cutoffs were used:

<u>Grade</u>	<u>Maximum Expected Age</u>
6th	12
7th	13
8th	14
9th	15
10th	16
11th	17
12th	18

**Gestational Age:** The length of time a fetus is in utero before birth. In this publication, the clinical estimate of gestational age has been used for analysis. Clinical gestational age is determined by the attendant at birth or a physician providing postnatal care to the newborn. A normal gestational age is defined as delivery between the completion of the 37th and the 42nd week of pregnancy.

**Healthy Start:** Healthy Start is a Massachusetts-funded program providing services and financing for prenatal care to low-income (up to 200% of the poverty level) pregnant women who lack health insurance but do not qualify for Medicaid.

**Live Birth:** A live birth is defined as any infant who breathes or shows any other evidence of life (such as beating of the heart, pulsation of the umbilical code, or definite movement of voluntary muscles) after delivery. All figures and tables in this report, showing Massachusetts data, are based on live births to Massachusetts residents (see Resident Birth).

**Low Birthweight:** see Birthweight Categories.

**Normal Birthweight:** see Birthweight Categories.

**Mother's Age:** Mother's age is computed from her date of birth and the date of delivery.

**Parity:** The number of live infants ever born to the mother. Parity includes all previous live births as well as the infant named on the birth certificate.

**Prenatal Care Payment Source:** Prenatal care payment source is self-reported by the mother. Groupings include:

- Private: Blue Cross/Blue Shield, commercial insurance, and health maintenance organizations (HMOs). HMO may include Medicaid recipients in managed care programs.
- Public: Medicaid, Healthy Start, Medicare and other government sources (e.g., CHAMPUS).
- Uninsured: Care paid for out of pocket or provided free of charge.
- Other: Workers' Compensation and other specified types of funding not classified elsewhere.

**Race/Ethnicity:** Mother's race and ethnicity are self-reported.

**Resident Birth:** Resident birth is defined as the birth of an infant whose mother reports her usual place of residence is Massachusetts. In Massachusetts, a resident is a person with a permanent address in one of the 351 cities or towns. Massachusetts resident births include all births that occur to residents of the Commonwealth whether they occur in Massachusetts or elsewhere.

**Teen Birth Rate:** The number of children born among females ages 15 to 19 divided by the population of females in that age group, multiplied by 1,000.

**Very Low Birthweight:** see Birthweight Categories.

**1992 Population Estimates of Females Aged 15 to 19 Years Living in  
25 Massachusetts Communities with the Highest Number of  
Teen Births in 1992**

<u>Community</u>	<u>Number of Females Aged 15-19 years</u>
Boston	21,494
Brockton	3,218
Cambridge	3,262
Chelsea	892
Chicopee	1,866
Fall River	3,186
Fitchburg	1,772
Framingham	2,230
Haverhill	1,639
Holyoke	1,446
Lawrence	2,685
Leominster	1,160
Lowell	3,861
Lynn	2,433
New Bedford	3,427
Pittsfield	1,527
Quincy	2,296
Revere	1,058
Salem	1,257
Somerville	2,107
Southbridge	579
Springfield	5,890
Taunton	1,575
Waltham	2,413
Worcester	6,649

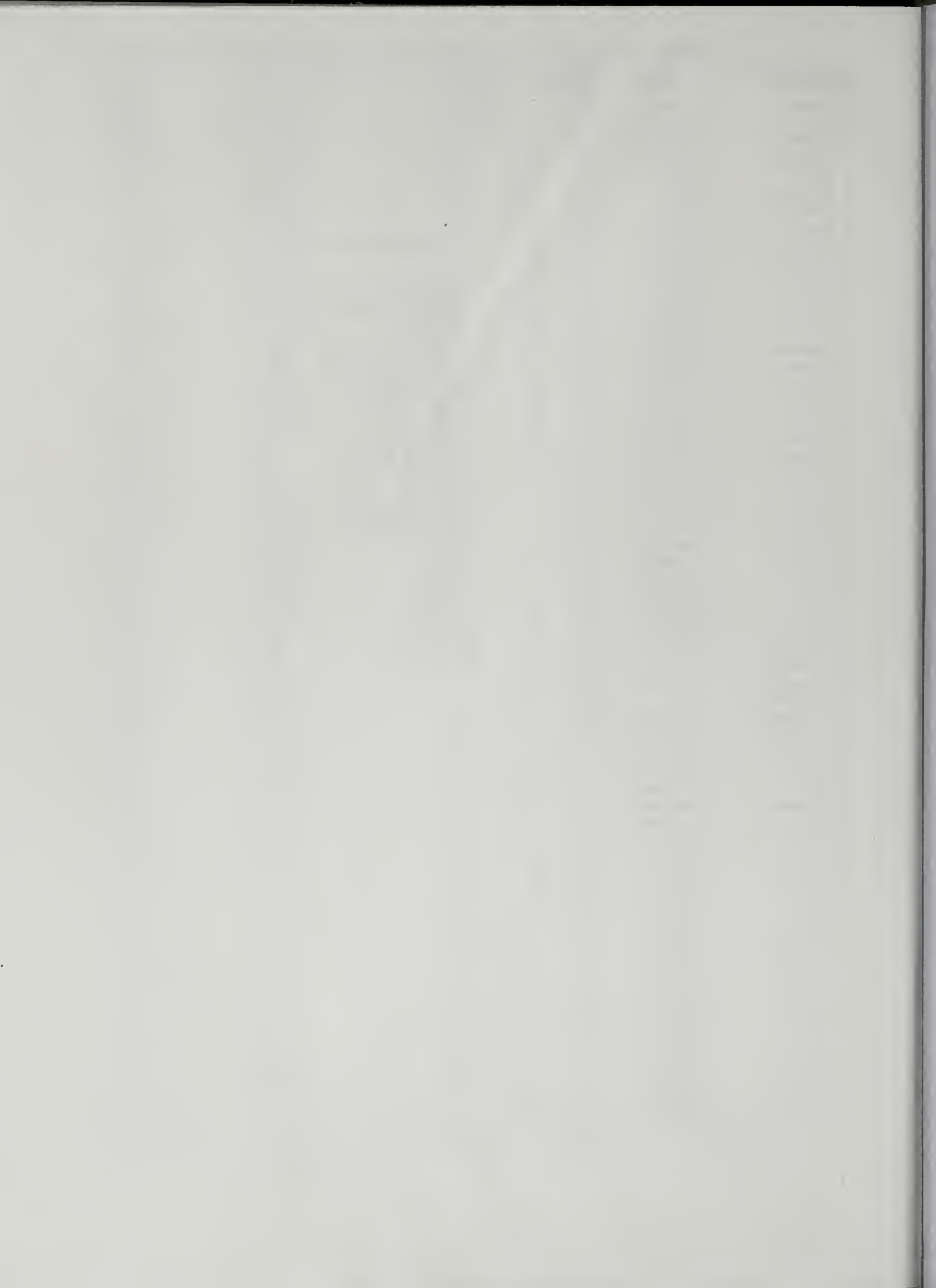


# Massachusetts Cities, Towns, Counties, and Community Health Network Area (CHNAs)

City/Town	County	CHNA	City/Town	County	CHNA
Abington	Plymouth	22	Dartmouth	Bristol	26
Acton	Middlesex	15	Dedham	Norfolk	18
Acushnet	Bristol	26	Deerfield	Franklin	2
Adams	Berkshire	1	Dennis	Barnstable	27
Agawam	Hampden	4	Dighton	Bristol	24
Alford	Berkshire	1	Douglas	Worcester	6
Amesbury	Essex	12	Dover	Norfolk	18
Amherst	Hampshire	3	Dracut	Middlesex	10
Andover	Essex	11	Dudley	Worcester	5
Arlington	Middlesex	17	Dunstable	Middlesex	10
Ashburnham	Worcester	9	Duxbury	Plymouth	23
Ashby	Middlesex	9	East Bridgewater	Plymouth	22
Ashfield	Franklin	2	East Brookfield	Worcester	5
Ashland	Middlesex	7	East Longmeadow	Hampden	4
Athol	Worcester	2	Eastham	Barnstable	27
Attleboro	Bristol	21	Easthampton	Hampshire	3
Auburn	Worcester	8	Easton	Bristol	22
Avon	Norfolk	22	Edgartown	Dukes	27
Ayer	Middlesex	9	Egremont	Berkshire	1
Barnstable	Barnstable	27	Erving	Franklin	2
Barre	Worcester	9	Essex	Essex	13
Becket	Berkshire	1	Everett	Middlesex	16
Bedford	Middlesex	15	Fairhaven	Bristol	26
Belchertown	Hampshire	3	Fall River	Bristol	25
Bellingham	Norfolk	6	Falmouth	Barnstable	27
Belmont	Middlesex	17	Fitchburg	Worcester	9
Berkley	Bristol	24	Florida	Berkshire	1
Berlin	Worcester	7	Foxborough	Norfolk	21
Bernardston	Franklin	2	Framingham	Middlesex	7
Beverly	Essex	13	Franklin	Norfolk	6
Billerica	Middlesex	10	Freetown	Bristol	26
Blackstone	Worcester	6	Gardner	Worcester	9
Blandford	Hampden	4	Gay Head	Dukes	27
Bolton	Worcester	9	Georgetown	Essex	12
Boston	Suffolk	19	Gill	Franklin	2
Bourne	Barnstable	27	Gloucester	Essex	13
Boxborough	Middlesex	15	Goshen	Hampshire	3
Boxford	Essex	12	Gosnold	Dukes	27
Boylston	Worcester	8	Grafton	Worcester	8
Braintree	Norfolk	20	Granby	Hampshire	3
Brewster	Barnstable	27	Granville	Hampden	4
Bridgewater	Plymouth	22	Great Barrington	Berkshire	1
Brimfield	Hampden	5	Greenfield	Franklin	2
Brockton	Plymouth	22	Groton	Middlesex	9
Brookfield	Worcester	5	Groveland	Essex	12
Brookline	Norfolk	18	Hadley	Hampshire	3
Buckland	Franklin	2	Halifax	Plymouth	23
Burlington	Middlesex	15	Hamilton	Essex	13
Cambridge	Middlesex	17	Hampden	Hampden	4
Canton	Norfolk	20	Hancock	Berkshire	1
Carlisle	Middlesex	15	Hanover	Plymouth	23
Carver	Plymouth	23	Hanson	Plymouth	23
Charlemont	Franklin	2	Hardwick	Worcester	9
Charlton	Worcester	5	Harvard	Worcester	9
Chatham	Barnstable	27	Harwich	Barnstable	27
Chelmsford	Middlesex	10	Hatfield	Hampshire	3
Chelsea	Suffolk	16	Haverhill	Essex	12
Cheshire	Berkshire	1	Hawley	Franklin	2
Chester	Hampden	3	Heath	Franklin	2
Chesterfield	Hampshire	3	Hingham	Plymouth	23
Chicopee	Hampden	3	Hinsdale	Berkshire	1
Chilmark	Dukes	27	Holbrook	Norfolk	20
Clarksburg	Berkshire	1	Holden	Worcester	8
Clinton	Worcester	9	Holland	Hampden	5
Cohasset	Norfolk	23	Holliston	Middlesex	7
Colrain	Franklin	2	Holyoke	Hampden	3
Concord	Middlesex	15	Hopedale	Worcester	6
Conway	Franklin	2	Hopkinton	Middlesex	7
Cummington	Hampshire	3	Hubbardston	Worcester	9
Dalton	Berkshire	1	Hudson	Middlesex	7
Danvers	Essex	14	Hull	Plymouth	23

City/Town	County	CHNA	City/Town	County	CHNA
Huntington	Hampshire	3	Northampton	Hampshire	3
Ipswich	Essex	13	Northborough	Worcester	7
Kingston	Plymouth	23	Northbridge	Worcester	6
Lakeville	Plymouth	24	Northfield	Franklin	2
Lancaster	Worcester	9	Norton	Bristol	21
Lanesborough	Berkshire	1	Norwell	Plymouth	23
Lawrence	Essex	11	Norwood	Norfolk	20
Lee	Berkshire	1	Oak Bluffs	Dukes	27
Leicester	Worcester	8	Oakham	Worcester	9
Lenox	Berkshire	1	Orange	Franklin	2
Leominster	Worcester	9	Orleans	Barnstable	27
Leverett	Franklin	2	Otis	Berkshire	1
Lexington	Middlesex	15	Oxford	Worcester	5
Leyden	Franklin	2	Palmer	Hampden	3
Lincoln	Middlesex	15	Paxton	Worcester	8
Littleton	Middlesex	15	Peabody	Essex	14
Longmeadow	Hampden	4	Pelham	Hampshire	3
Lowell	Middlesex	10	Pembroke	Plymouth	23
Ludlow	Hampden	3	Pepperell	Middlesex	9
Lunenburg	Worcester	9	Peru	Berkshire	1
Lynn	Essex	14	Petersham	Worcester	2
Lynnfield	Essex	15	Phillipston	Worcester	2
Malden	Middlesex	16	Pittsfield	Berkshire	1
Manchester	Essex	13	Plainfield	Hampshire	3
Mansfield	Bristol	21	Plainville	Norfolk	21
Marblehead	Essex	14	Plymouth	Plymouth	23
Marion	Plymouth	26	Plympton	Plymouth	23
Marlborough	Middlesex	7	Princeton	Worcester	9
Marshfield	Plymouth	23	Provincetown	Barnstable	27
Mashpee	Barnstable	27	Quincy	Norfolk	20
Mattapoisett	Plymouth	26	Randolph	Norfolk	20
Maynard	Middlesex	7	Raynham	Bristol	24
Medfield	Norfolk	7	Reading	Middlesex	15
Medford	Middlesex	16	Rehoboth	Bristol	24
Medway	Norfolk	6	Revere	Suffolk	16
Melrose	Middlesex	15	Richmond	Berkshire	1
Mendon	Worcester	6	Rochester	Plymouth	26
Merrimac	Essex	12	Rockland	Plymouth	23
Methuen	Essex	11	Rockport	Essex	13
Middleborough	Plymouth	24	Rowe	Franklin	2
Middlefield	Hampshire	3	Rowley	Essex	12
Middleton	Essex	11	Royalston	Worcester	2
Milford	Worcester	6	Russell	Hampden	4
Millbury	Worcester	8	Rutland	Worcester	9
Millis	Norfolk	7	Salem	Essex	14
Millville	Worcester	6	Salisbury	Essex	12
Milton	Norfolk	20	Sandisfield	Berkshire	1
Monroe	Franklin	2	Sandwich	Barnstable	27
Monson	Hampden	5	Saugus	Essex	14
Montague	Franklin	2	Savoy	Berkshire	1
Monterey	Berkshire	1	Scituate	Plymouth	23
Montgomery	Hampden	4	Seekonk	Bristol	24
Mt. Washington	Berkshire	1	Sharon	Norfolk	21
Nahant	Essex	14	Sheffield	Berkshire	1
Nantucket	Nantucket	27	Shelburne	Franklin	2
Natick	Middlesex	7	Sherborn	Middlesex	7
Needham	Norfolk	18	Shirley	Middlesex	9
New Ashford	Berkshire	1	Shrewsbury	Worcester	8
New Bedford	Bristol	26	Shutesbury	Franklin	2
New Braintree	Worcester	9	Somerset	Bristol	25
New Marlborough	Berkshire	1	Somerville	Middlesex	17
New Salem	Franklin	2	South Hadley	Hampshire	3
Newbury	Essex	12	Southampton	Hampshire	3
Newburyport	Essex	12	Southborough	Worcester	7
Newton	Middlesex	18	Southbridge	Worcester	5
Norfolk	Norfolk	6	Southwick	Hampden	4
North Adams	Berkshire	1	Spencer	Worcester	5
North Andover	Essex	11	Springfield	Hampden	4
N. Attleborough	Bristol	21	Sterling	Worcester	9
North Brookfield	Worcester	5	Stockbridge	Berkshire	1
North Reading	Middlesex	15	Stoneham	Middlesex	15

City/Town	County	CHNA	
Stoughton	Norfolk	22	
Stow	Middlesex	7	
Sturbridge	Worcester	5	
Sudbury	Middlesex	7	
Sunderland	Franklin	2	
Sutton	Worcester	6	
Swampscott	Essex	14	
Swansea	Bristol	25	
Taunton	Bristol	24	
Templeton	Worcester	9	Community Health Network Areas
Tewksbury	Middlesex	10	
Tisbury	Dukes	27	1. Pittsfield
Tolland	Hampden	4	2. Greenfield
Topsfield	Essex	13	3. Holyoke/Chicopee/Northampton
Townsend	Middlesex	9	4. Springfield
Truro	Barnstable	27	5. Southbridge
Tyngsborough	Middlesex	10	6. Milford
Tyringham	Berkshire	1	7. Framingham/Marlborough
Upton	Worcester	6	8. Worcester
Uxbridge	Worcester	6	9. Fitchburg/Gardner
Wakefield	Middlesex	15	10. Lowell
Wales	Hampden	5	11. Lawrence
Walpole	Norfolk	6	12. Haverhill
Waltham	Middlesex	18	13. Beverly/Gloucester
Ware	Hampshire	3	14. Lynn/Salem
Wareham	Plymouth	26	15. Woburn
Warren	Worcester	5	16. Medford/Malden
Warwick	Franklin	2	17. Cambridge/Somerville
Washington	Berkshire	1	18. Newton/Waltham
Watertown	Middlesex	17	19. City of Boston
Wayland	Middlesex	7	20. Quincy
Webster	Worcester	5	21. Attleboro
Wellesley	Norfolk	18	22. Brockton
Wellfleet	Barnstable	27	23. Plymouth
Wendell	Franklin	2	24. Taunton
Wenham	Essex	13	25. Fall River
West Boylston	Worcester	8	26. New Bedford
West Bridgewater	Plymouth	22	27. Cape/Islands
West Brookfield	Worcester	5	
West Newbury	Essex	12	
West Springfield	Hampden	4	
West Stockbridge	Berkshire	1	
West Tisbury	Dukes	27	
Westborough	Worcester	7	
Westfield	Hampden	4	
Westford	Middlesex	10	
Westhampton	Hampshire	3	
Westminster	Worcester	9	
Weston	Middlesex	18	
Westport	Bristol	25	
Westwood	Norfolk	18	
Weymouth	Norfolk	20	
Whately	Franklin	2	
Whitman	Plymouth	22	
Wilbraham	Hampden	4	
Williamsburg	Hampshire	3	
Williamstown	Berkshire	1	
Wilmington	Middlesex	15	
Winchendon	Worcester	9	
Winchester	Middlesex	15	
Windsor	Berkshire	1	
Winthrop	Suffolk	16	
Woburn	Middlesex	15	
Worcester	Worcester	8	
Worthington	Hampshire	3	
Wrentham	Norfolk	6	
Yarmouth	Barnstable	27	









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# ***Adolescent Births: A Statistical Profile***

## ***Massachusetts 1993***

GOVERNMENT DOCUMENTS  
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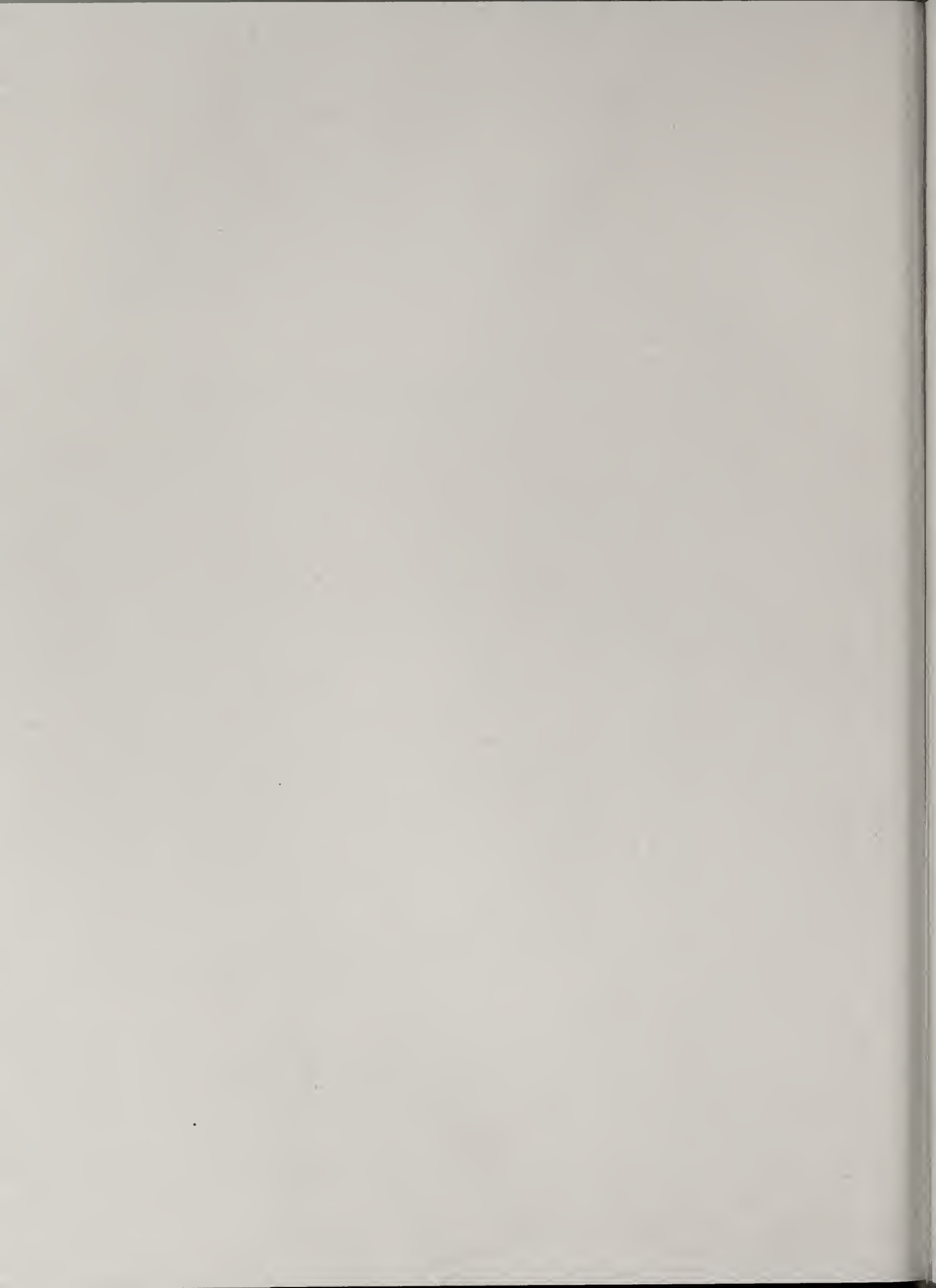
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MASS. DEPT. OF PUBLIC HEALTH  
BUREAU OF FAMILY AND COMMUNITY HEALTH

***Massachusetts Department of Public Health  
Bureau of Family and Community Health  
Office of Statistics and Evaluation***

***April 1995***

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# ***Adolescent Births: A Statistical Profile***

***Massachusetts  
1993***

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Argeo Paul Cellucci, Lieutenant Governor

Gerald Whitburn, Secretary, Executive Office of Health and Human Services

David H. Mulligan, Commissioner of Public Health

Deborah Klein Walker, Assistant Commissioner, Bureau of Family and Community Health

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April 1995

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# Executive Summary

## Introduction

*Adolescent Births: A Statistical Profile, Massachusetts, 1993* presents selected statistics and trend data on births among adolescent women in Massachusetts as well as comparisons with national data for certain indicators. Four sections cover demographic and birth characteristics and teen birth trends for the state as a whole; birthweight, gestational age, and adequacy of prenatal care, teen birth rates and birth characteristics for each of the 25 communities with the highest number of teen births in 1993; and teen birth characteristics for each of the 351 Massachusetts communities and for each of the 27 Community Health Network Areas. Teen births refer to births to women less than 20 years old, unless specified otherwise. Massachusetts data are from the Registry of Vital Records and Statistics, Massachusetts Department of Public Health (MDPH). United States data are from the Centers for Disease Control and Prevention/National Center for Health Statistics (NCHS).

Reducing the rates of teenage pregnancy and teen births is a national public health objective (Healthy Children 2000). In addition to the health risks associated with early child-bearing such as an increased likelihood of pregnancy complications and poor birth outcomes, adolescent mothers may also face a host of negative psychological, social, and economic consequences associated with unintended births.

Although the overall teen birth rate for Massachusetts is about half the national rate, some Massachusetts communities have community-specific rates that are higher than the national rate. The data presented in this profile are intended to provide information that will assist with program planning, provide researchers with reference measures, and assist policy makers in their efforts to address adolescent health issues.

## Summary

We recommend that the following cautions be kept in mind when examining the data:

- In cases where there are small numbers of teen births, especially at the city/town level and by race/ethnicity or age, small changes in the numbers from year to year will produce large changes in percentages, making the differences appear more significant than they are in reality.
- Percentages are based on the number of births or mothers that have known information regarding a demographic or birth characteristic unless otherwise stated.
- Birth rates (number of births per 1,000 women) are calculated using Census counts of the resident population of Massachusetts. Because the Census is taken only once every ten years, the annual numbers of residents in each city/town and in the state for non-Census years are projected estimates that do not take into account migration into or out of geographic areas. Therefore, while the numbers of births are accurate, the numbers of resident women may be underestimated, resulting in inflated birth rates, or overestimated, resulting in lower birth rates.

## ***I. State-Wide Demographic and Birth Characteristics***

### **Number and Percentage of Births to Women under Age 20**

- In 1993, 6,606 infants were born to Massachusetts women under age 20, a 14% decline since 1980, and a 10.5% decline since 1990. This decline is due in part to the decrease in the number and proportion of females aged 12-19 living in Massachusetts from 420,353 (14.2% of all Massachusetts women) in 1970, to 305,509 (9.8%) in 1990.
- The percentage of all births in Massachusetts born to women under age 20 (7.8%) was similar to the percent in 1992 (7.7%).

### **Birth Rates among Women Ages 15-19**

- The number of teen births per 1,000 women aged 15-19 continued to decline, reaching a five-year low in 1993 of 31.5. This rate was a little over half the 1992 national teen birth rate of 60.7.

### **Age Distribution of Teen Mothers**

- Since 1988, the distribution of teen births by age of mother has varied little, with 18 to 19 year old women accounting for just over 60% of all teen births. In 1993, one-third (36%) of all teen births were among 15-17 year olds, and about 2% were among teens under 15 years old.

### **Racial and Ethnic Distribution of Teen Births**

- In 1993, 3,450 (52.2%) of all teen births were among white non-Hispanic mothers; 1,809 (27.4%) were among Hispanic mothers; 1,003 (15.2%) were among black non-Hispanic mothers; and 180 (2.7%) were among Asian mothers.

### **Previous Live Births**

- One in five teen births (20.8%) in 1993 were to mothers who had at least one previous live birth; nearly one in twenty (4.5%) teen births were to mothers who had at least two previous live births.

### **Age for Grade**

- Almost 30% of Massachusetts teen births in 1993 were to mothers who were one or more grades behind their appropriate grade according to their age.



## **Marital Status**

- Of all teen women giving birth in 1993, 89.1% were unmarried. The percent of births to unmarried teens grew from 56.9% in 1980, to 83.3% in 1990. This trend is also reflected among births to women ages 20 and older; the percent of births to unmarried women increased from 10.7% in 1980, to 19.6% in 1990, and to 21.1% in 1993.

## ***II. Birthweight, Gestational Age, and Adequacy of Prenatal Care***

### **Low Birthweight and Gestational Age**

- In 1993, as in previous years, the low birthweight (LBW) rate among teen births was higher than the LBW rate among women of all ages, regardless of race/ethnicity. The younger the mother, the higher the LBW rate. In 1993, 9.9% of infants born to women less than 18 years old were LBW, while the LBW rate was 7.9% among 18-19 year olds, and 6.1% among women of all ages.
- The percentage of LBW infants varied significantly by race/ethnicity both among teen births and among all births; the percentage of LBW infants among black non-Hispanics (12.3%) was twice as high as among white non-Hispanics (6.7%). The LBW percentage among Hispanics (10.2%) also was higher than among white non-Hispanics. The same pattern was found among women of all ages.
- Low birthweight is associated with inadequate prenatal care. Among teen births, the LBW rate among teens who received inadequate or no prenatal care (13.6%) was higher than the rate among teens who received adequate care (8.2%).
- Premature birth (<37 completed weeks gestation) was more common among infants of teens (9.3%) than among infants of mothers of all ages (7.3%).

### **Adequacy of Prenatal Care**

- While 83.8% of all infants born in 1993 received adequate prenatal care, only 65.5% of teen births had adequate care. Adequate prenatal care was lowest among infants with Asian teen mothers (49.4%), and highest among infants with white non-Hispanic teen mothers (68.5%).

### **Caesarean Sections**

- Caesarean sections occurred less frequently among teen births (13.5%) than among births to women of all ages (21.5%).

### **Breastfeeding**

- Overall, the percentage of teen births (42.5%) whose mothers intended to breastfeed was lower than the percentage of all births (62.4%).



### ***III. Birth Characteristics for Selected Communities***

State-wide data often mask variation among individual communities. In this section, statistics are given for the 25 Massachusetts communities with the highest number of births among teenagers in 1993.

#### **Community Birth Rates**

- The five Massachusetts communities with the highest teen birth rates in 1993, were Holyoke (137.7 births per 1,000 Holyoke women aged 15-19 years), Lawrence (114.6), Springfield (96.8), Chelsea (91.9), and Southbridge (88.4). In 1993, nearly one out of every five (18.6%) infants born among teenage women in Massachusetts occurred in these five communities.
- The same five communities had the highest 1992 teen birth rates as well, with the only difference being that Chelsea ranked third and Springfield ranked fourth.
- Twenty-two out of the 25 communities had the highest number of teen births in both 1992 and 1993. In 1993, Revere, Salem, and Framingham were replaced by Attleboro, Methuen, and Westfield.

#### **Racial and Ethnic Distribution of Births**

- In the top five communities, the majority of teen births in 1993 were to Hispanic mothers. The percentage of younger teen mothers (<18 years) who were Hispanic was 90.3% in Holyoke, 80.9% in Lawrence, 79.3% in Chelsea, 46.4% in Southbridge, and 57.8% in Springfield.

#### **Low Birthweight (LBW)**

- The top five communities with the highest percentages of LBW among teen births were Fitchburg (16.8%), Taunton (15.7%), Waltham (14.9%), Lynn (12.2%), and Boston (12.0%). However, due to small total numbers of teen births, the percentages in Fitchburg, Taunton, and Waltham have fluctuated widely across years.

#### **Adequacy of Prenatal Care**

- Holyoke had the highest percentage of teen births with inadequate or no prenatal care (17.2%). Other communities with relatively high percentages were Chelsea (13.7%) and Brockton (13.4%). The state-wide percentage of births with inadequate or no prenatal care was 7.3% for teen births and 2.8% for all births.

## Previous Live Births

- The percentage of births among teens who had at least one previous live birth was highest in Holyoke (36.3%), Lawrence (34.7%), Fitchburg (32.7%), Southbridge (31.5%), and Springfield (28.0%). The state-wide percentage of births to teen mothers who had at least one previous live birth was 20.8%.

## Age for Grade

- The percentage of teen births in 1993 among mothers who were one or more grades behind the appropriate grade for their age was highest in Holyoke (47.1%), Fitchburg (46.5%) and Lawrence (43.2%).

## IV. *Birth Characteristics for all 351 Communities and the 27 Community Health Network Areas (CHNA)*

In this section, the following statistics are presented for each of the 351 city/towns in Massachusetts and for each of the 27 CHNAs: the number of all births, the number of teen births by mother's age (<18 years and <20 years), the number of births among teen mothers (<20 years) who started prenatal care in the first trimester, and the number whose prenatal care was paid for with public funds. The Community Health Network Areas are aggregations of all Massachusetts cities and towns into 27 groups for the purpose of community health planning (see Appendix for CHNA city/town groupings).

- In 1993, the Springfield CHNA had the highest percentage of teen births (15.6%) (double the state-wide percentage of 7.8%), followed by the New Bedford CHNA (14.3%) and the Lawrence CHNA (14.0%).
- The Brockton CHNA had the lowest percentage of teen births with prenatal care starting in the first trimester (60.0%). The Springfield CHNA had the next lowest percentage (61.7%).



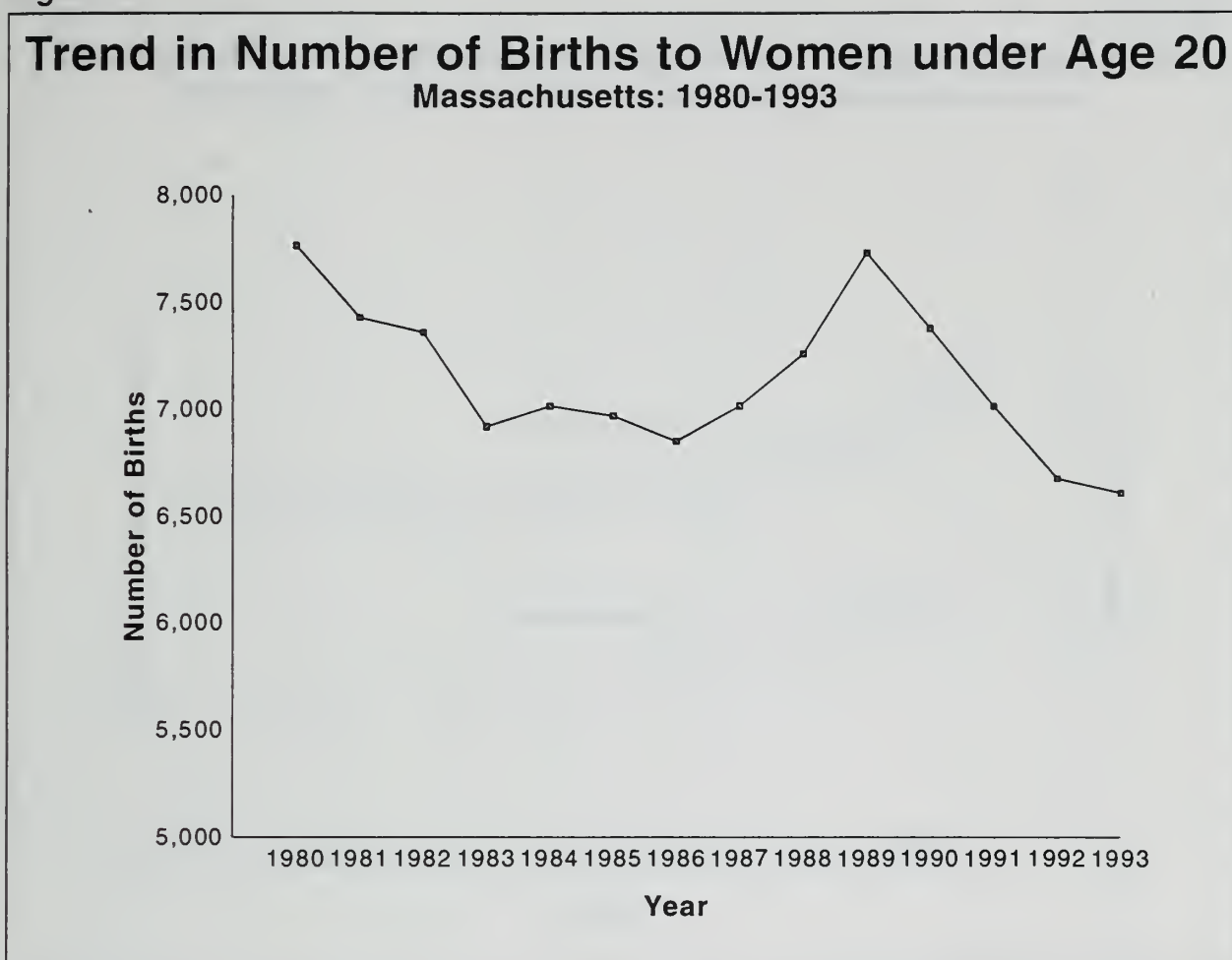
*I.*

*Demographic  
and Birth  
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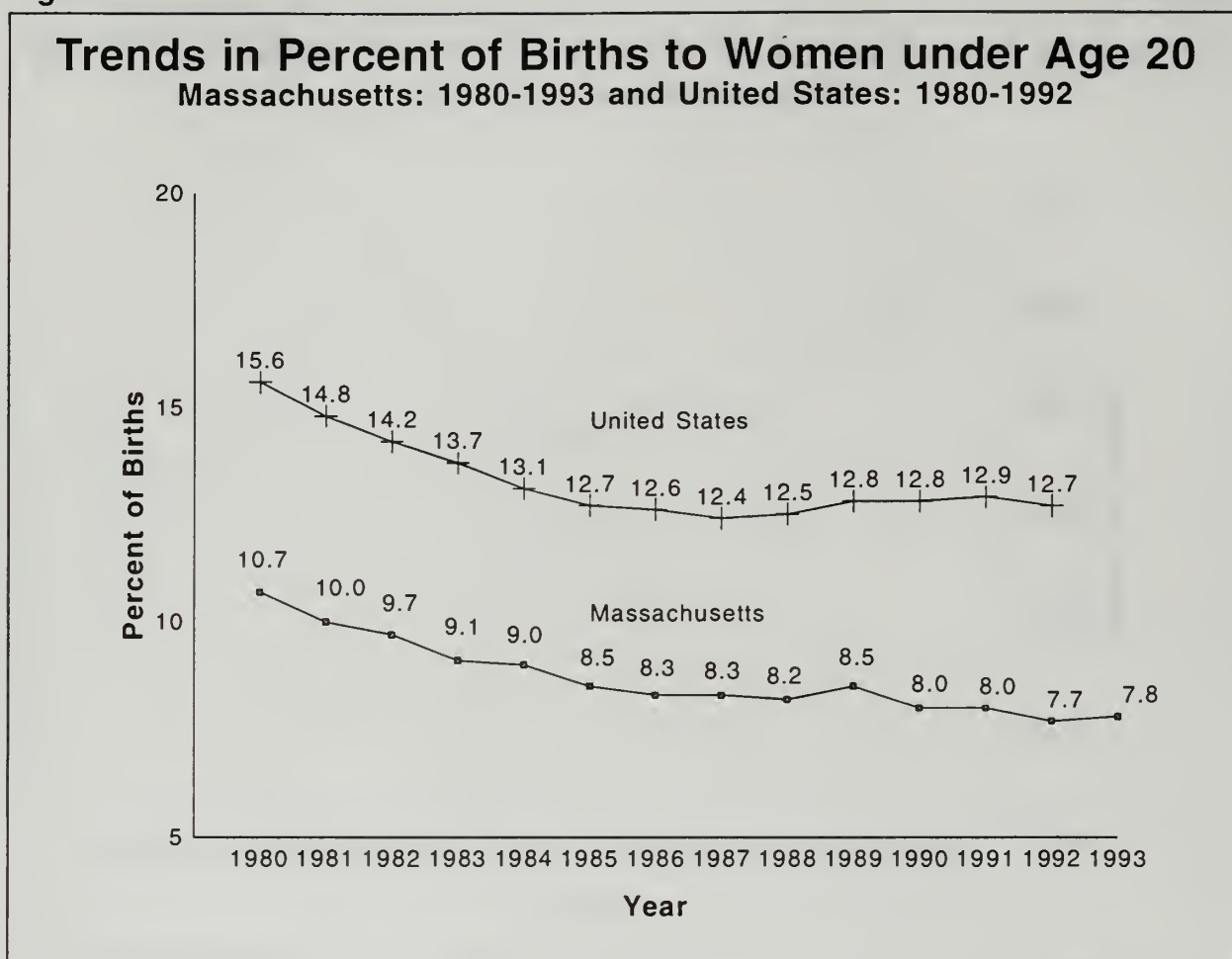
Figure 1.



Source: Registry of Vital Records and Statistics, MDPH, 1993.

- In 1993, 6,606 infants were born to women under age 20, representing a 1% decline from the previous year, and a 14% decline since 1980.
- Since 1990, the number of births to teens declined 10.5%, a slightly greater decrease than the 8.5% decline in the number of births to all women residing in Massachusetts (data not shown).

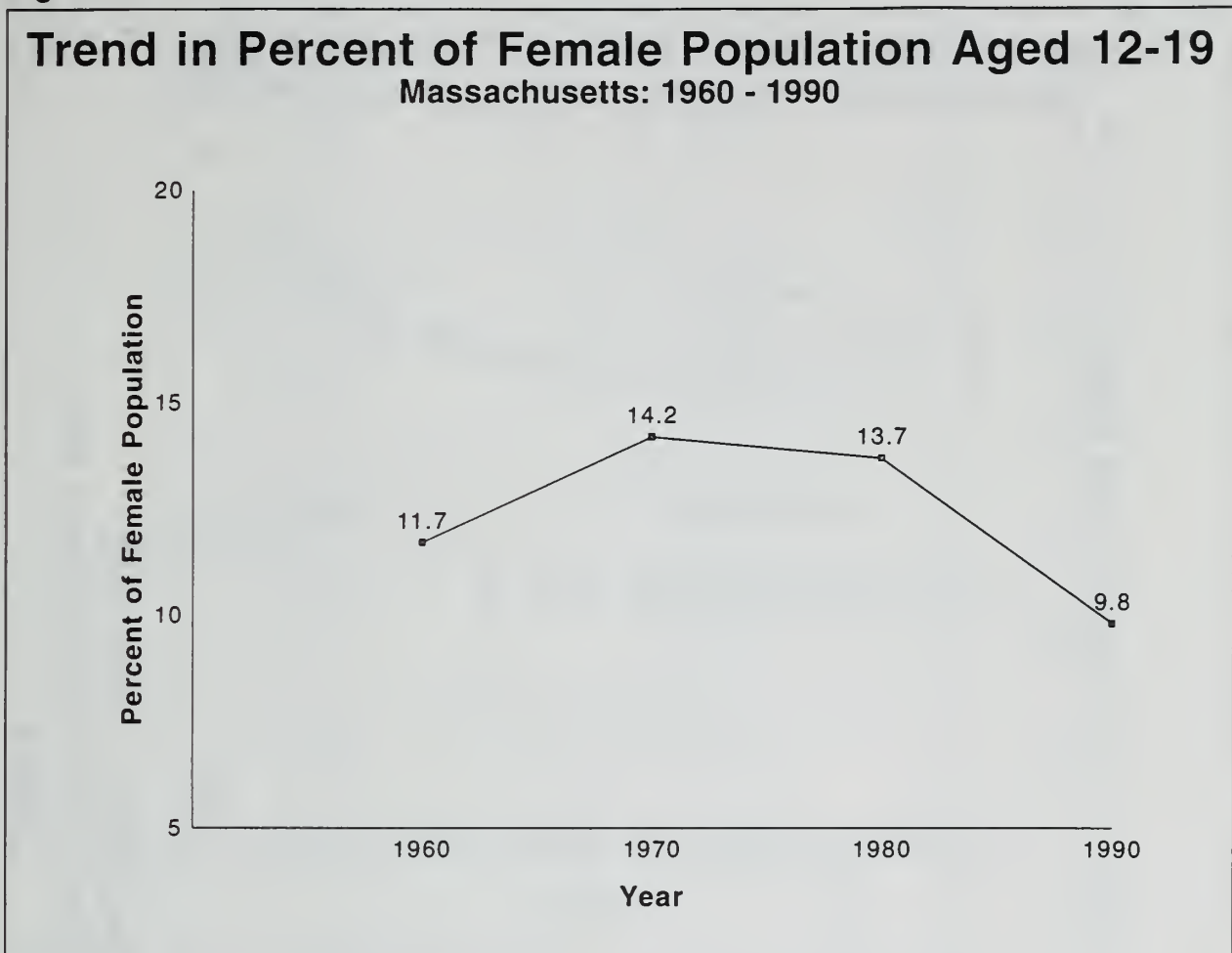
Figure 2.



Sources: Registry of Vital Records and Statistics, MDPH, 1993; National Center for Health Statistics, 1992.

- In 1993, 7.8% of all births in Massachusetts were to women under age 20. This was similar to the percent in 1992 (7.7%).
- The percent of births to teenage mothers slowly, but steadily, declined from 1980 to 1993 in Massachusetts. This decline reflects, in part, the changing demographics of the Commonwealth (see Figure 3). In contrast, after declining steadily throughout the 1980's, the national percentages have shown a leveling-off since 1989.
- The 1993 percentage of teen births in Massachusetts (7.8%) remains well below the 1992 national percentage (12.7%) (1993 national data unavailable).

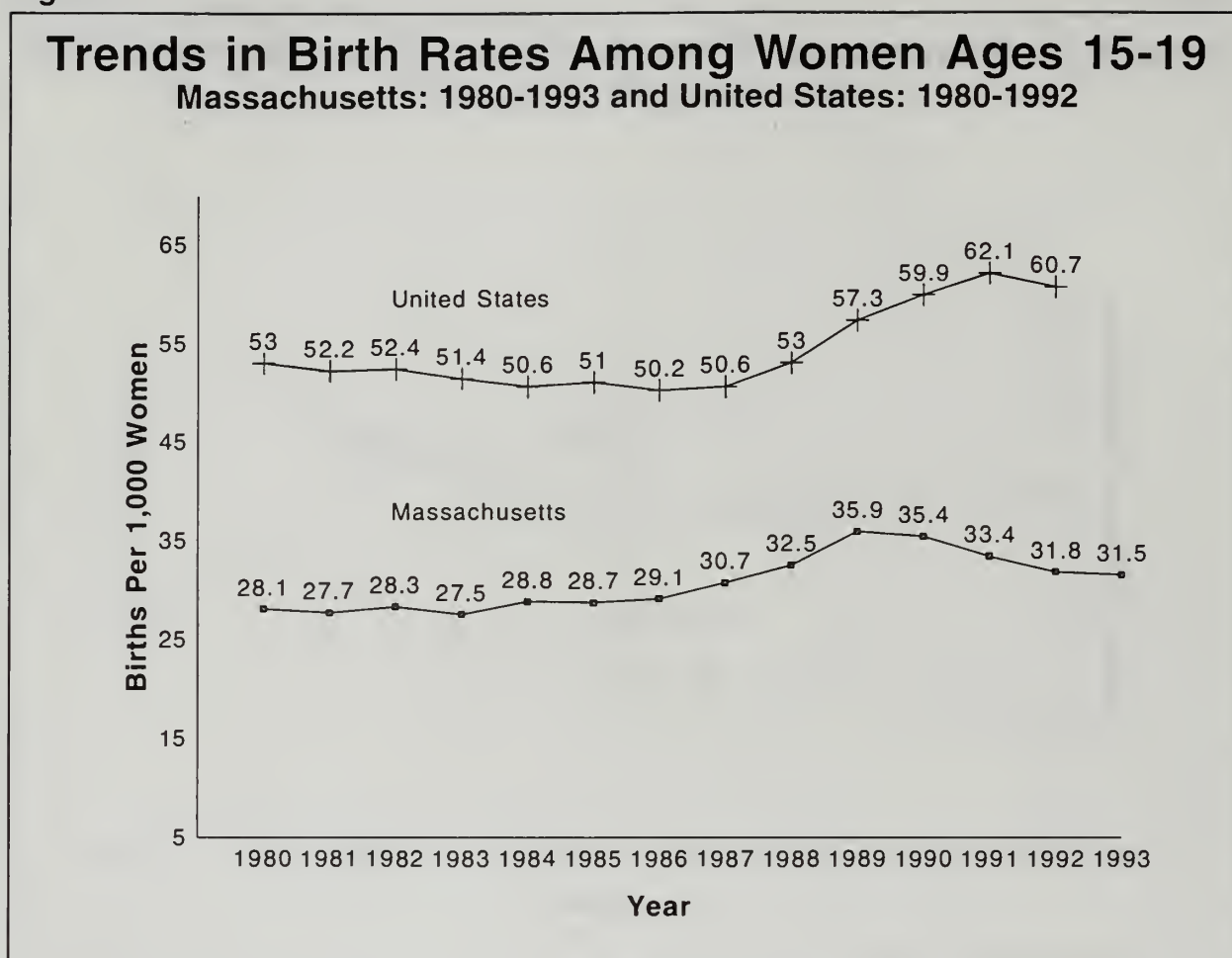
Figure 3.



Source: U.S. Bureau of Census, Decennial Censuses 1960-1980; 1990 MARS File.

- The Massachusetts population is aging. The percent of the female population aged 12 to 19 living in the Commonwealth declined from a high of 14.2% in 1970, to a low of 9.8% in 1990. Over the past two decades, the number of females aged 12 to 19 in Massachusetts declined from 420,353 in 1970, to 305,509 in 1990 (data not shown).

Figure 4.



Sources: Registry of Vital Records and Statistics, MDPH, 1993; National Center for Health and Statistics, 1992.

- Since 1989, the teen birth rate declined steadily in Massachusetts reaching a five-year low of 31.5 per 1,000 women ages 15-19 in 1993. However, this rate is higher than it was ten years ago.
- The decline in the teen birth rate from 1989 to 1993 mirrors the decline in the overall birth rate for the Commonwealth, which declined from 61.9 to 57.7 among women ages 15-44 (data not shown).
- The 1993 Massachusetts teen birth rate was nearly half the national rate for 1992 (national data for 1993 not available). The gap between the Massachusetts and national rates has widened since 1988, when the Massachusetts rate was 39% lower than the national rate.

NOTE: The birth rate for women aged 15-19 years is calculated by dividing the number of births to these women by the number of women aged 15-19 years, and multiplying the results by 1,000.

**Table 1.**  
**Trend in Teenage Births by Mother's Age**  
**Massachusetts: 1988-1993**

Age	1988		1989		1990		1991		1992		1993	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>12-19</b>	7,260	100.0	7,734	100.0	7,382	100.0	7,014	100.0	6,676	100.0	6,606	100.0
<b>12</b>	0	0.0	0	0.0	3	**	2	**	3	**	1	**
<b>13</b>	27	0.4	19	0.2	18	0.2	18	0.3	15	0.2	15	0.2
<b>14</b>	120	1.7	108	1.4	103	1.4	102	1.5	103	1.5	121	1.8
<b>15</b>	352	4.8	345	4.5	351	4.8	372	5.3	341	5.1	360	5.4
<b>16</b>	732	10.1	853	11.0	810	11.0	758	10.8	782	11.7	741	11.2
<b>17</b>	1,450	20.0	1,426	18.4	1,344	18.2	1,391	19.8	1,327	19.9	1,259	19.1
<b>18</b>	2,068	28.5	2,207	28.5	2,014	27.3	1,910	27.2	1,753	26.3	1,872	28.3
<b>19</b>	2,511	34.6	2,776	35.9	2,739	37.1	2,461	35.1	2,352	35.2	2,237	33.9

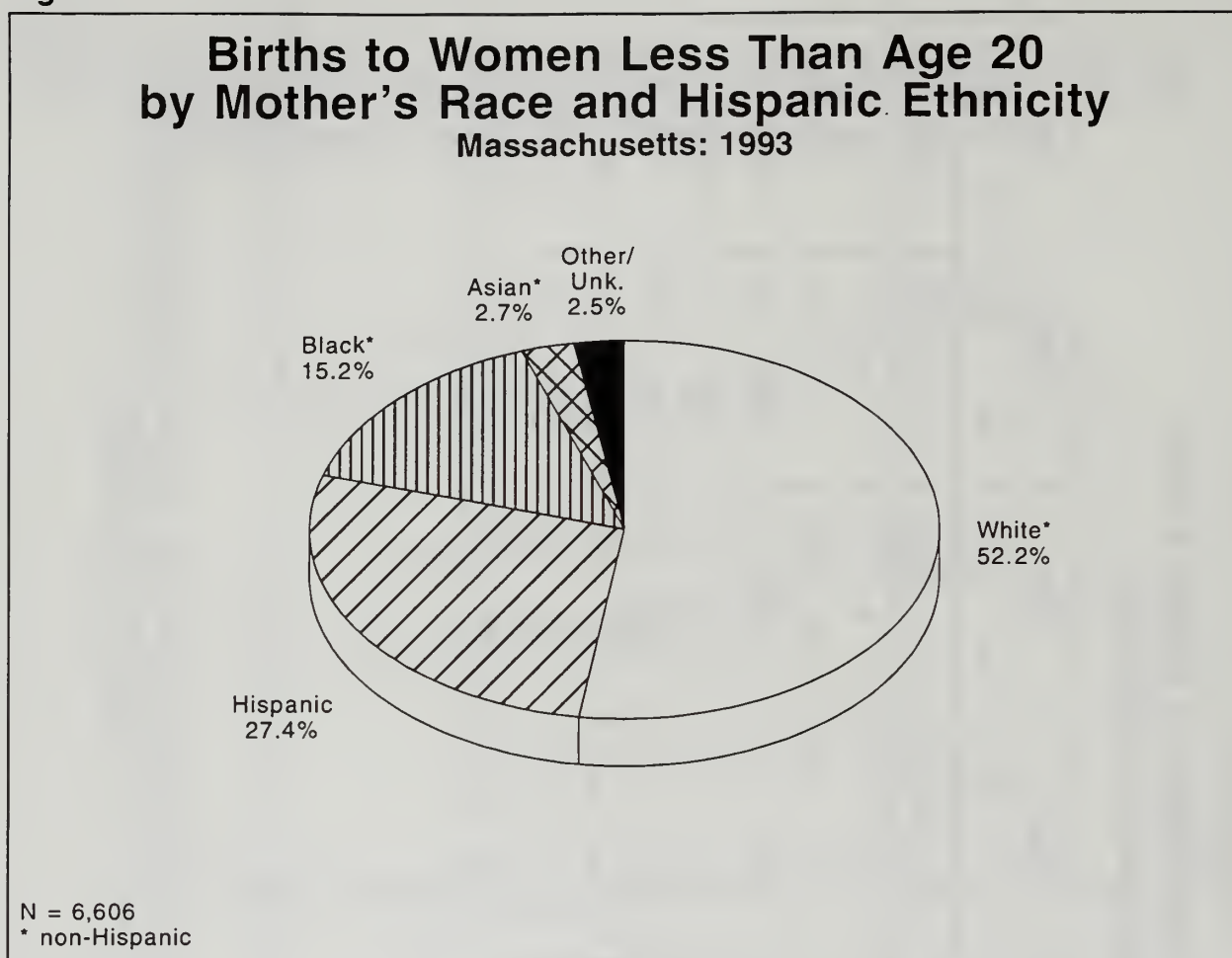
Source: Registry of Vital Records and Statistics, MDPH: 1988-1993.

\*\* Calculations based on fewer than five events are excluded.

- In 1993, 37.8% (2,497) of all teen births were to females less than 18 years old; 2% (137) of teen births had mothers who were less than 15 years old.
- The distribution of teen births by mother's age varied little between 1988 and 1993. Just over 60% of teen births were to mothers 18 to 19 years old, about 35% to 15 to 17 year old mothers, and about 2% to mothers less than 15 years old.



Figure 5.



Source: Registry of Vital Records and Statistics, MDPH, 1993.

- In 1993, 3,450 (more than half) of all teen births were to white non-Hispanic mothers; 1,809 were to Hispanic mothers; 1,003 were to black non-Hispanic mothers, and 180 were to Asian mothers.

**Table 2.**  
**Trends in Teenage Births by Mother's Race and Hispanic Ethnicity**  
**Massachusetts: 1988-1993**

Race/ Ethnicity	1988		1989		1990		1991		1992		1993	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>Total</b>	7,260	100.0	7,734	100.0	7,382	100.0	7,014	100.0	6,676	100.0	6,606	100.0
<b>White*</b>	4,332	59.7	4,614	59.7	4,200	56.9	3,836	54.7	3,547	53.1	3,450	52.2
<b>Black*</b>	955	13.2	1,141	14.8	1,121	15.2	1,059	15.1	1,058	15.8	1,003	15.2
<b>Hispanic</b>	1,468	20.2	1,592	20.6	1,714	23.2	1,769	25.2	1,737	26.0	1,809	27.4
<b>Asian*</b>	304	4.2	241	3.1	233	3.2	194	2.8	178	2.7	180	2.7
<b>Other*</b>	34	0.5	132	1.7	105	1.4	145	2.1	147	2.2	156	2.4
<b>Unknown</b>	167	2.3	14	0.2	9	0.1	11	0.2	9	0.1	8	0.1

Source: Registry of Vital Records and Statistics: 1988-1993.

\* non-Hispanic

- Since 1988, the proportion of infants born to white non-Hispanic teen mothers decreased from 59.7% to 52.2%. The proportion of infants born to Asian teen mothers also decreased from 4.2% to 2.7%. In contrast, the proportion of births to Hispanic teen mothers increased from 20.2% to 27.4%, and the proportion of births to black non-Hispanic teen mothers increased from 13.2% to 15.2%.

**Table 3.**  
**Births by Mother's Race, Ethnicity and Age**  
**Massachusetts: 1993**

	Under 18 Years		Under 20 Years		All Ages	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>Total Births</b>	2,497	100.0	6,606	100.0	84,627	100.0
<b>White*</b>	1,095	43.9	3,450	52.2	65,471	77.4
<b>Black*</b>	434	17.4	1,003	15.2	6,417	7.6
West Indian	19	0.8	42	0.6	558	0.7
Haitian	15	0.6	39	0.6	948	1.1
Other Black	400	16.0	922	14.0	4,911	5.8
<b>Hispanic</b>	816	31.7	1,809	27.4	8,250	9.7
Puerto Rican	655	26.2	1,386	21.0	4,480	5.3
Dominican	79	3.2	184	2.8	1,379	1.6
Central American	29	1.2	95	1.4	960	1.1
Other Hispanic	53	2.0	137	2.2	1,431	1.7
<b>Asian*</b>	77	3.1	180	2.7	3,334	3.9
Vietnamese	22	0.9	56	0.8	634	0.7
Cambodian	34	1.4	75	1.1	544	0.6
Other SE Asian	8	0.3	19	0.3	143	0.2
Chinese	3	**	7	0.1	979	1.2
Other Asian	10	0.4	23	0.3	1,034	1.2
<b>Other*</b>	70	2.8	156	2.4	983	1.2
<b>Unknown</b>	5	0.2	8	0.1	172	0.2

Source: Registry of Vital Records and Statistics, MDPH, 1993.

<sup>1</sup> Percentages are based on column totals.

\* non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

- In 1993, the race/ethnicity distribution of births among teens and among all ages was different. Just over one quarter of teen births were to Hispanic mothers, and 15% to black non-Hispanic mothers, while less than 10% of all births had Hispanic mothers, and less than 8% of all births had black non-Hispanic mothers. Asian mothers were represented among teen births and births to mothers of all ages in similar proportions (2.7% and 3.9% respectively).
- Although births to white non-Hispanic mothers made up 77.4% of births to women of all ages, they were only 52.2% of the births to women under age 20 and 43.9% of the births to women under age 18.

**Table 4.**  
**Births by Mother's Race, Hispanic Ethnicity, Age,**  
**and Prenatal Care Payment Source**  
**Massachusetts: 1993**

Mother's Race <sup>1</sup>	Under 18 Years		Under 20 Years		All Ages	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>Total Births<sup>1</sup></b>	2,497	100.0	6,606	100.0	84,627	100.0
<b>Public<sup>3</sup></b>	1,789	71.6	4,903	74.2	23,324	27.6
<b>Private<sup>4</sup></b>	570	22.8	1,384	21.0	57,477	67.9
<b>White*</b>	1,095	100.0	3,450	100.0	65,471	100.0
Public	655	59.8	2,283	66.2	12,011	18.3
Private	375	34.2	990	28.7	50,622	77.3
<b>Black*</b>	434	100.0	1,003	100.0	6,417	100.0
Public	319	73.5	773	77.1	3,617	56.4
Private	90	20.7	184	18.3	2,492	38.8
<b>Hispanic</b>	816	100.0	1,809	100.0	8,250	100.0
Public	708	86.8	1,583	87.5	5,870	71.2
Private	75	9.2	154	8.5	2,001	24.3
<b>Asian*</b>	77	100.0	180	100.0	3,334	100.0
Public	60	77.9	142	78.9	1,304	39.1
Private	9	11.7	25	13.9	1,875	56.2
<b>Other*</b>	70	100.0	156	100.0	983	100.0
Public	47	67.1	121	77.6	503	51.2
Private	19	27.1	29	18.6	419	42.6

Source: Registry of Vital Records and Statistics, MDPH, 1993.

\* non-Hispanic

<sup>1</sup> Records with unknown Mother's Race/Ethnicity are included in Total Births.

<sup>2</sup> Percentages are based on Race/Ethnicity totals. Percentages for Public and Private do not add up to 100 because total includes Workers Compensation, Self Pay, and Free Care.

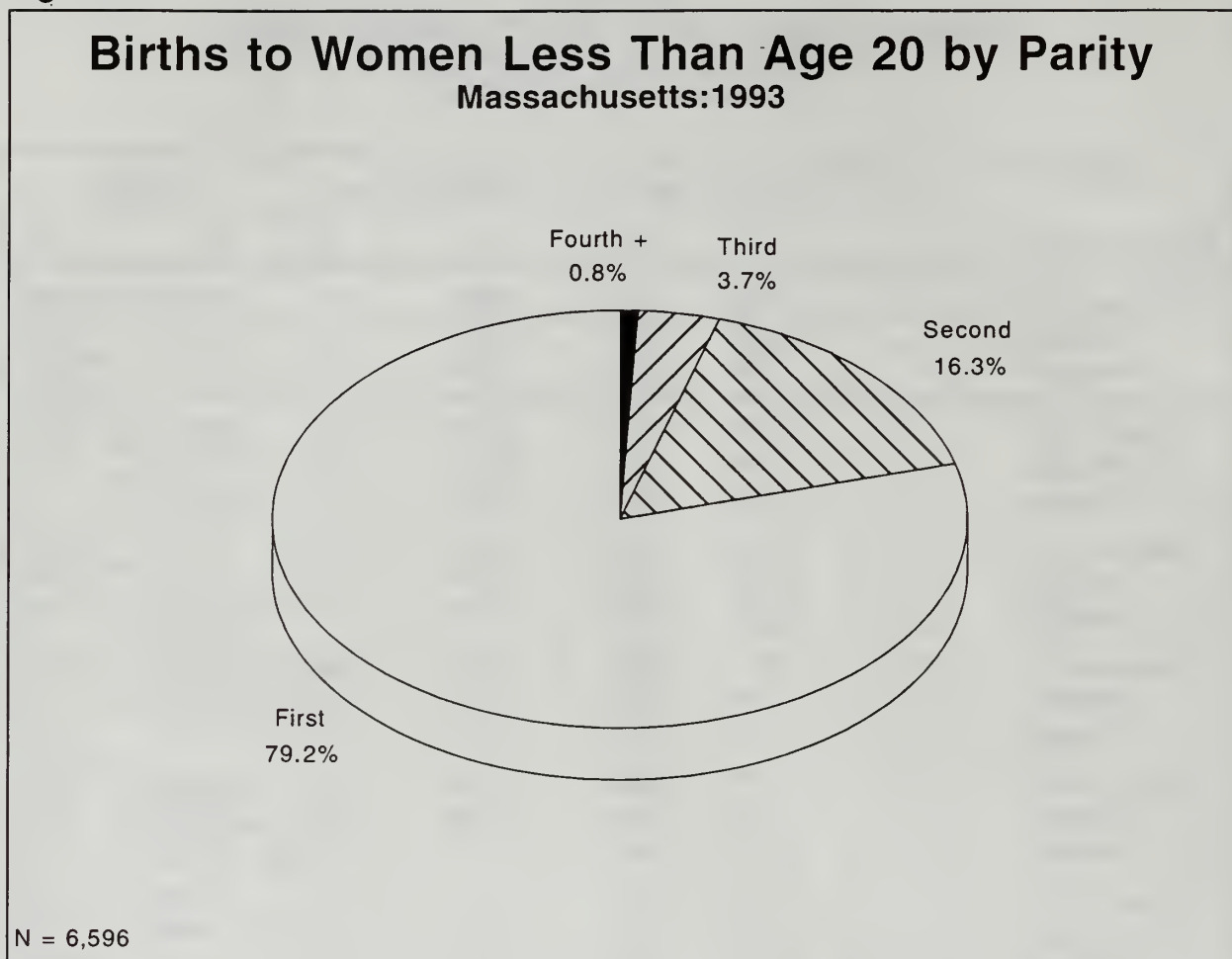
<sup>3</sup> Public: Medicaid, Medicare, Healthy Start and Other Government.

<sup>4</sup> Private: Blue Cross/Blue Shield, other commercial insurance, HMO. HMO may include Medicaid recipients in managed care programs.

- Teen mothers continue to receive publicly-funded prenatal care at significantly higher levels than mothers of all ages, regardless of race/ethnic group. In 1993, 74.29% of infants born to teen mothers had prenatal care wholly or in part financed by public funds. This percentage was up from 72.4% in 1992. The percentage of all infants whose mothers received publicly-financed prenatal care remained constant at about 27% (1992 data not shown).
- Percentages of publicly-funded prenatal care among teen mothers varied by race/ethnicity in their level and direction of change since 1992. The percentages among white non-Hispanic and Hispanic teen mothers remained stable, while the percentage among black non-Hispanic teens increased from 70.1% to 77.1%, and dropped from 87.1% to 78.9% for Asians (1992 data not shown).



Figure 6.



Source: Registry of Vital Records and Statistics, MDPH, 1993.

- About one in five teen births in 1993 (1,370) were to mothers who had at least one previous live birth; nearly one in twenty teen births were to mothers who had at least two previous live births (293). The distribution was similar in 1992.

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Note: Parity is defined as number of live births including this birth. Percentages are based on births with known parity. The vast majority of second live births were singletons (96%); 4% of second live births were actually due to twin births.



## *II.*

### *Birthweight, Gestational Age, and Adequacy of Prenatal Care*

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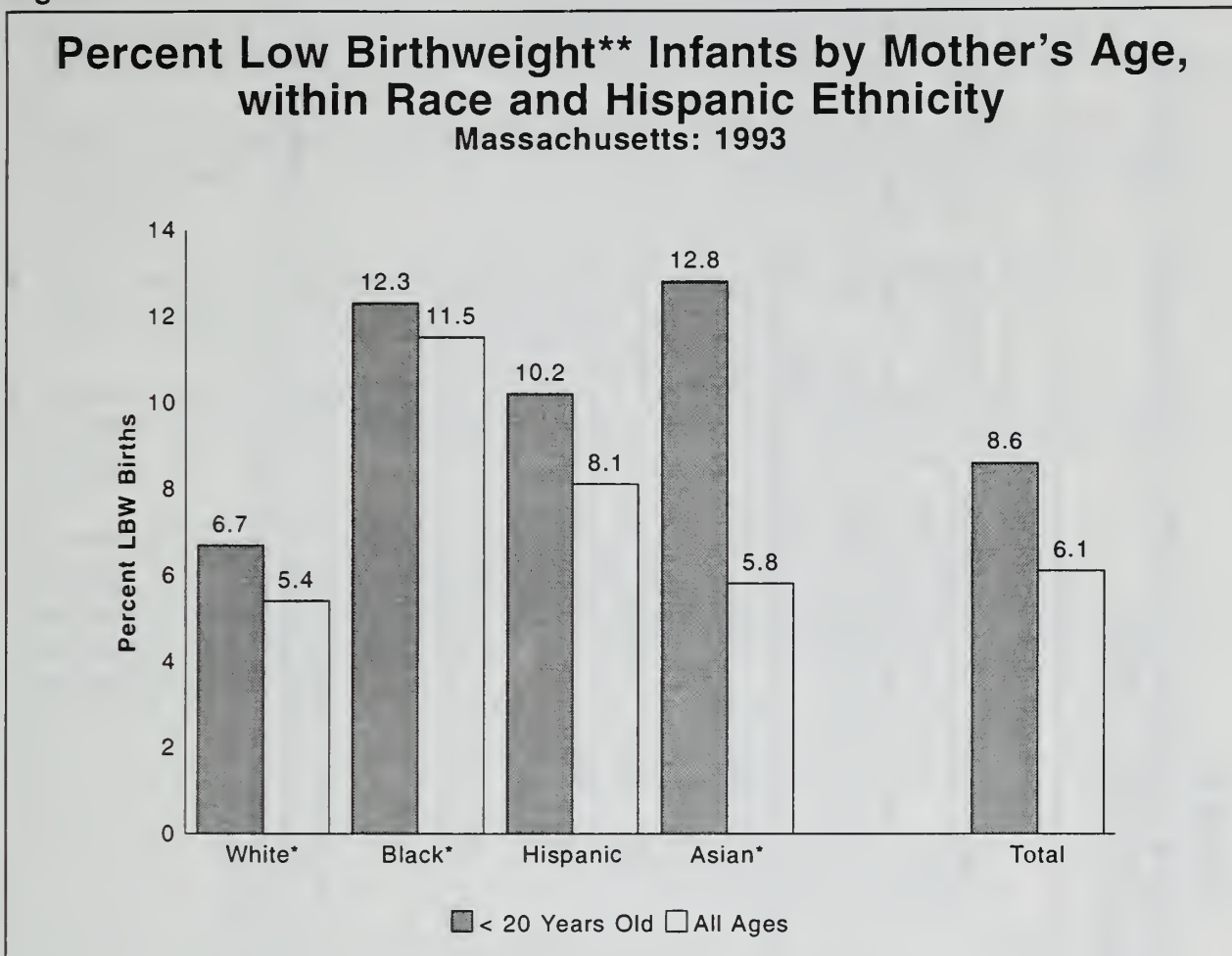
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Figure 7.



Source: Registry of Vital Records and Statistics, MDPH, 1993.

\* non-Hispanic

\*\* Low birthweight: < 2,500 grams or 5.5 pounds.

- In 1993, the percentage of low birthweight infants born to women under age 20 (8.6%) was higher than the percentage of low birthweight infants born to women of all ages (6.1%). This represents a slight increase from 1992 (8.0% and 5.9% respectively).
- Within every race and Hispanic ethnicity group, women under age 20 had higher percentages of low birthweight infants than women of all ages.
- The percentage of low birthweight infants among Hispanic teen mothers increased from 8.6% in 1992 to 10.2% in 1993.
- Asian women had the highest percentage of low birthweight births among teenagers (12.8%) in 1993, although the number of low birthweight infants was relatively small (N=23). Due to small numbers, the percentage of low birthweight infants among Asian teenagers has fluctuated widely. It was 8.6% in 1990, 7.8% in 1991, and 12.9% in 1992 (data not shown).

**Table 5.**  
**Birthweight and Prenatal Characteristics By Mother's Race and Hispanic Ethnicity**  
**Massachusetts: 1993**

Mother's Race/Ethnicity	Birthweight <sup>1</sup>				Prenatal Care				Breastfeeding <sup>3</sup>			
	Very Low		Low		Adequate Care <sup>2</sup>		First Trimester		C-Section		Breastfeeding <sup>3</sup>	
	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>
All Ages	962	1.1	5,202	6.1	70,718	83.8	74,309	88.0	18,146	21.5	51,840	62.4
< 20 Years	113	1.7	570	8.6	4,317	65.5	4,664	70.8	888	13.5	2,784	42.5
White*	49	1.4	231	6.7	2,358	68.5	2,515	73.1	489	14.2	1,235	36.3
Black*	26	2.6	123	12.3	619	61.9	683	68.3	149	14.9	446	44.6
Hispanic	34	1.9	185	10.2	1,152	63.9	1,267	70.2	209	11.6	987	54.8
Asian*	4	**	23	12.8	88	49.4	95	53.4	14	7.8	47	26.4
Other*	0	0.0	8	5.1	96	61.5	100	64.1	26	16.8	68	43.6
Unknown	0	0.0	0	0.0	4	**	4	**	1	**	1	**

Source: Registry of Vital Records and Statistics, MDPH, 1993.

\* non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

1 Very low birthweight: < 1,500 grams or 3.3 pounds. Low birthweight: < 2,500 grams or 5.5 pounds.

2 Adequacy of Prenatal Care is determined from an index that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. See Glossary for further explanation.

3 Mother was breastfeeding or intending to breastfeed at time the birth certificate was completed.

4 Percentages are calculated only for cases where information is known.

- While very low birthweight (VLBW) is relatively uncommon, it occurred more frequently among infants of teen mothers (1.7%) than among infants of all mothers (1.1%). Over 56% of VLBW teen births occurred among infants with black, Hispanic, or Asian mothers.
- Almost 71% of all teens entered prenatal care in the first trimester; compared to 88% of mothers and all ages. Asian teens had the lowest percentage of prenatal care initiation (53.4%).
- The percentage of black teen mothers who received adequate prenatal care increased from 53.5% in 1992, to 61.9% in 1993 (1992 data not shown).
- Caesarean sections were less common among teenagers than among mothers of all ages (13.5% versus 21.5%). Only 7.8% of births to Asian teens were performed by Caesarean section.
- Overall, 42.5% of teen mothers indicated either they were breastfeeding during their hospital stay or intended to breastfeed their baby. Hispanic teens had the highest percentage of breastfeeding mothers (54.8%), followed by blacks (44.6%). The percent of mothers of all ages who reported breastfeeding was substantially higher (62.4%) than the percentage among teens.



**Table 6.**  
**Low Birthweight<sup>1</sup> by Mother's Age, Race and Hispanic Ethnicity**  
**Massachusetts: 1993**

Age	Total		White*		Black*		Hispanic		Asian*		Other		Unknown	
	LBW	N % <sup>3</sup>	LBW	N %	LBW	N %	LBW	N %	LBW	N %	LBW	N %	LBW	N %
All Ages <sup>2</sup>	5,202	6.1	3,516	5.4	735	11.5	668	8.1	195	5.8	77	7.8	11	6.4
< 20	570	8.6	231	6.7	123	12.3	185	10.2	23	12.8	8	5.1	0	0.0
18-19	324	7.9	141	6.0	71	12.5	98	9.9	10	9.7	4	**	0	0.0
<18	246	9.8	90	8.2	52	12.0	87	10.7	13	16.9	4	**	0	0.0
15-17	233	9.9	86	8.1	50	12.3	80	10.6	13	17.8	4	**	0	0.0
12-14	13	9.5	4	**	2	**	7	10.9	0	0.0	0	0.0	0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1993.

\* non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Excludes records with unknown mother's age.

<sup>3</sup> Percentages are based on number of low birthweight infants divided by the total births in each category.

■ In general, the percentage of low birthweight infants increased as maternal age decreased. However, among infants with black non-Hispanic mothers, the low birthweight percentage among 18-19 year olds (12.5%) was as high as the percentage among 15-17 year olds (12.3%)

**Table 7.**  
**Low Birthweight Among Teen Births**  
**by Level of Prenatal Care and Mother's Race and Hispanic Ethnicity**  
**Massachusetts: 1993**

Mother's Race and Ethnicity	Level of Prenatal Care <sup>1</sup>							
	Adequate				Intermediate			
	Births		Low Birthweight <sup>2</sup>		Births		Low Birthweight <sup>2</sup>	
	N <sup>3</sup>		N	% <sup>4</sup>	N <sup>3</sup>		N	% <sup>4</sup>
<b>Teen Total</b>	4,315		354	8.2	1,782		147	8.2
<b>White*</b>	2,357		155	6.6	869		58	6.7
<b>Black*</b>	619		69	11.1	287		31	10.8
<b>Hispanic</b>	1,151		115	10.0	511		47	9.2
<b>Asian*</b>	88		11	12.5	69		7	10.1
<b>Other/ Unknown</b>	100		4	**	46		4	**
					478		65	13.6
					212		17	8.0
					93		23	24.7
					139		22	15.8
					20		3	**
					0		0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1993.

\* non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Adequacy of Prenatal Care is determined from an index which combines trimester of prenatal care registration with the number of prenatal care visits. The index adjusted for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. Intermediate care requires second trimester registration and at least five prenatal visits. See Glossary for further explanation.

<sup>2</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>3</sup> Births with unknown birthweight were excluded.

<sup>4</sup> Percentages calculated on known values of Adequacy of Prenatal Care and Birthweight

■ Overall, the percent of low birthweight infants was higher among infants of teens with late or no prenatal care (13.6%) than among infants of teens with adequate prenatal care (8.2%). Low birthweight was the same (8.2%) between infants of teens receiving adequate and those of teens receiving intermediate prenatal care.

■ For every race and ethnic group, low birthweight was higher among infants of teens with late or no prenatal care than among infants of teens who had adequate prenatal care.

**Table 8.**  
**Teenage Births by Gestational Age, Mother's Race and Hispanic Ethnicity**  
**Massachusetts: 1993**

Gestational Age <sup>1</sup> (weeks completed)	Total		White*		Black*		Hispanic		Asian*		Other		Unknown	
	N	% <sup>2</sup>	N	%	N	%	N	%	N	%	N	%	N	%
< 28	59	0.9	21	0.6	18	1.8	20	1.1	0	0.0	0	0.0	0	0.0
< 37	612	9.3	258	7.5	117	11.7	205	11.3	21	11.7	11	7.1	0	0.0
37-39	2,558	38.7	1,214	35.2	429	42.8	763	42.2	84	46.7	65	41.7	3	**
40-41	2,976	45.0	1,702	49.3	390	38.9	747	41.3	71	39.4	64	41.0	2	**
42+ <sup>3</sup>	408	6.2	252	7.3	56	5.6	83	4.6	3	**	14	9.0	0	0.0
Unknown	52	0.8	24	0.7	11	1.1	11	0.6	1	**	2	**	3	**

Source: Registry of Vital Records and Statistics, MDPH, 1993.

\* non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Clinical estimate of the total number of weeks gestation completed at delivery.

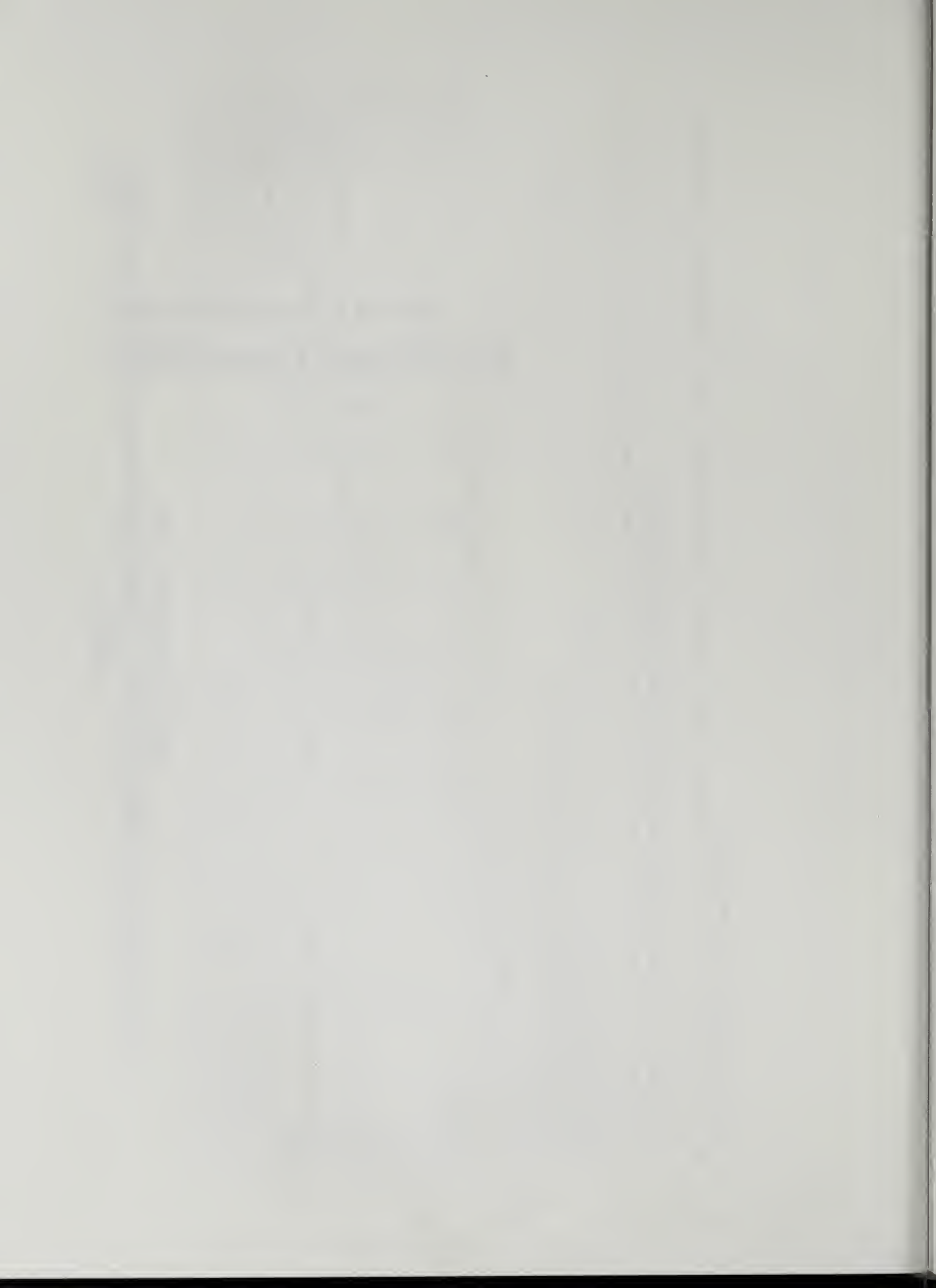
<sup>2</sup> Percentages are based on column totals

<sup>3</sup> The majority (330 out of 408) of this group completed no more than 42 weeks gestation.

- Prematurity (< 37 weeks gestation) was more common among infants of teens (9.3%) than among infants of mothers of all ages 7.3% (data on all births not shown), and remained unchanged from 1992 (9.4%).
- Among teen births, the percentage of premature births was equally high among infants of black, Hispanic, and Asian mothers (11.7%, 11.3% and 11.7% respectively).

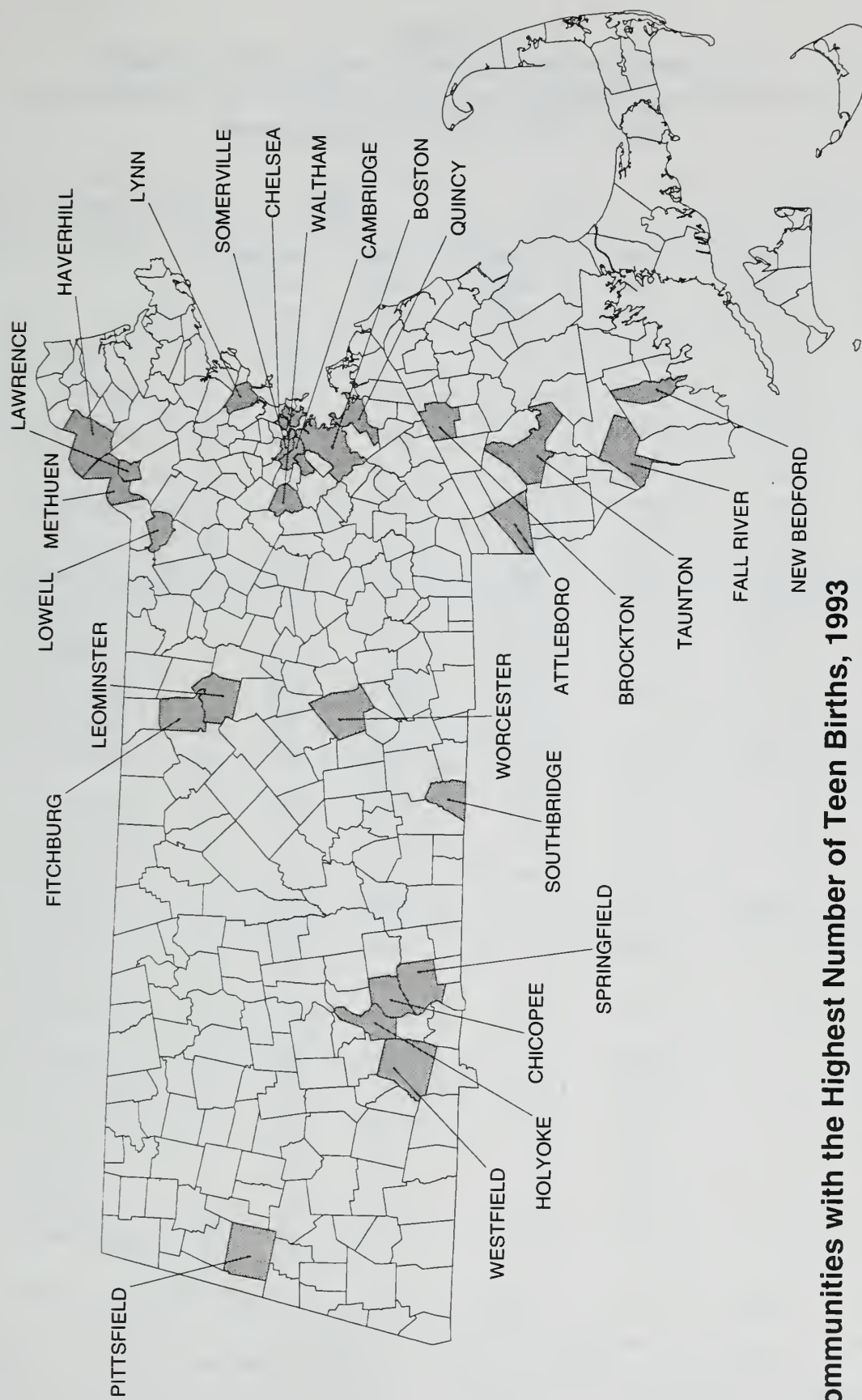
### *III.*

#### *Birth Characteristics for Selected Communities*





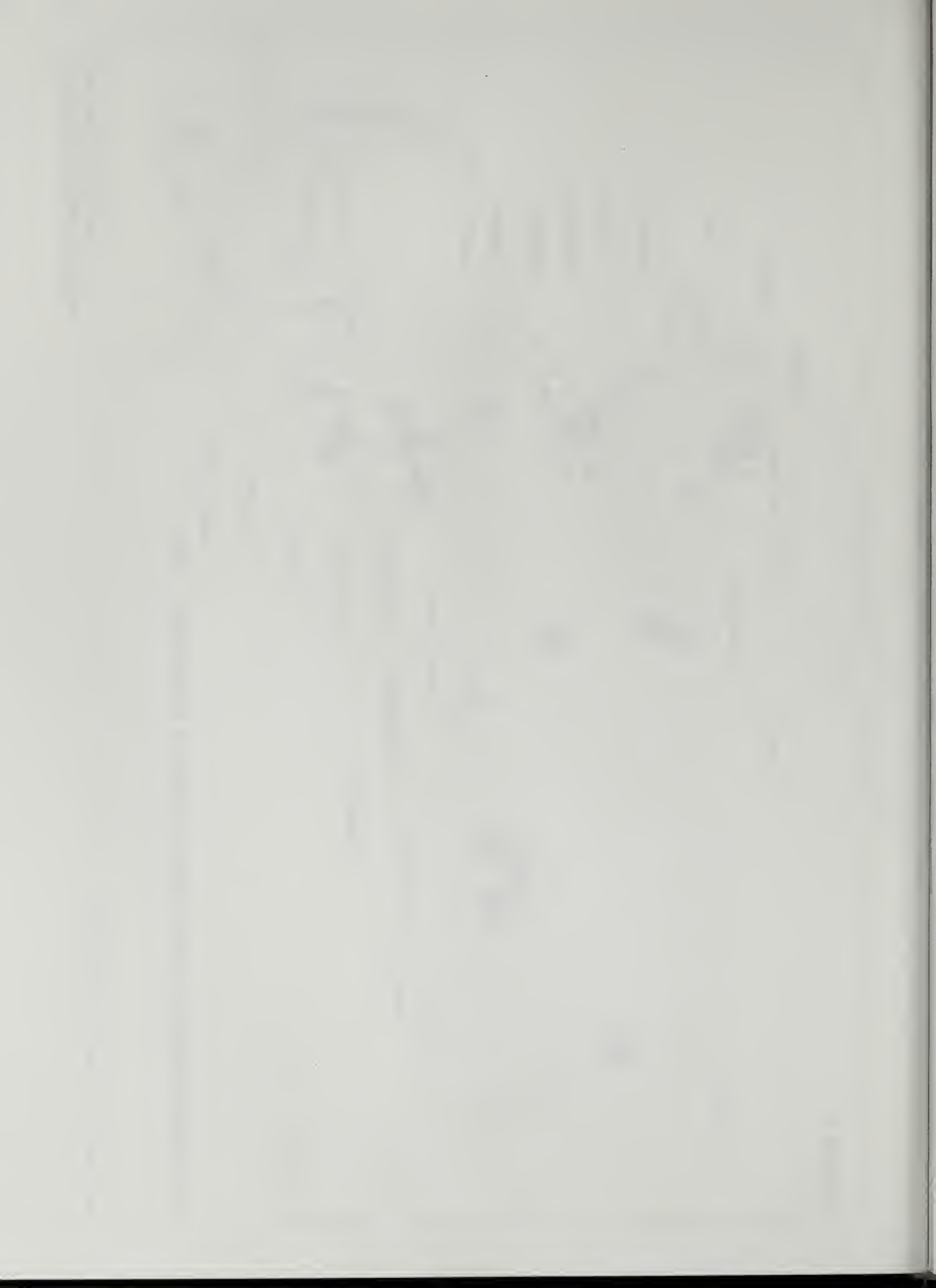
**Figure 8.**



## 25 Communities with the Highest Number of Teen Births, 1993

Source: Registry of Vital Records and Statistics, MDPH

Map Produced by OSE, BFCH  
Massachusetts Department of Public Health



**Table 9.**  
**Trends in Birth Rates Among Women Ages 15-19**  
**for Selected Communities<sup>1</sup>, Ranked by 1993 Teen Birth Rate<sup>2</sup>**  
**Massachusetts: 1993, 1990, 1985**

1993 Rank	Demographic Area	1993		1990		1985	
		Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate
1	Holyoke	199	137.7	203	140.3	182	104.3
2	Lawrence	304	114.6	338	122.8	269	100.6
3	Springfield	567	96.8	523	87.9	398	59.8
4	Chelsea	81	91.9	105	114.8	67	67.3
5	Southbridge	51	88.4	48	82.5	43	66.8
6	Lynn	191	78.7	194	79.4	170	59.2
7	New Bedford	260	76.1	263	76.3	218	57.6
8	Lowell	264	67.9	309	81.3	254	61.0
9	Brockton	207	64.0	216	67.8	240	62.8
10	Worcester	395	60.0	399	58.8	312	42.1
11	Fitchburg	100	56.6	146	82.1	100	46.7
12	Fall River	179	56.3	246	76.9	238	67.9
13	Taunton	88	55.6	95	61.0	76	43.1
14	Leominster	64	54.1	42	37.8	62	45.0
15	Haverhill	83	49.4	94	60.4	80	43.3
16	Boston	1,005	46.8	1,137	52.7	1,158	46.7
17	Attleboro	56	46.6	53	45.9	57	42.5
18	Methuen	50	38.2	53	41.7	44	30.7
19	Chicopee	63	33.8	84	44.9	59	26.7
20	Pittsfield	49	32.1	74	48.3	69	34.8
21	Somerville	65	31.5	64	29.2	83	29.2
22	Westfield	48	28.7	50	29.4	39	20.0
23	Quincy	47	20.6	51	22.0	57	19.2
24	Waltham	48	20.5	30	11.7	31	11.1
25	Cambridge	46	14.9	54	14.9	68	18.0
	Massachusetts	6,469	31.5	7,258	35.1	6,857	28.6

Source: Registry of Vital Records and Statistics, MDPH, 1985, 1990, 1993; 1990 population data are based on the 1990 Census MARS file; the 1993 data are interpolations based on the 1990 Census and the 1995 estimates from the Massachusetts Institute for Social and Economic Research; and the 1985 data are based on the 1980 and 1990 censuses.

<sup>1</sup> 25 Communities with the highest number of 1993 teen births. <sup>2</sup> Rates are per 1,000 females ages 15-19 in each city/town.

**Table 10.**  
**Births by Mother's Age, Race and Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1993**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Attleboro	All Ages	588	9	27	26	8	658
	< 18	18	**	**	**	0	23
	< 20	46	**	5	5	0	57
	20 +	542	8	22	21	8	601
Boston	All Ages	3,088	3,288	1,683	564	185	8,808
	< 18	49	227	110	7	14	407
	< 20	175	535	265	25	26	1,026
	20 +	2,913	2,753	1,418	539	159	7,782
Brockton	All Ages	872	332	162	41	165	1,572
	< 18	31	22	20	0	13	86
	< 20	93	48	42	**	29	214
	20 +	779	284	120	39	136	1,358
Cambridge	All Ages	588	206	109	104	32	1,039 <sup>2</sup>
	< 18	5	6	7	**	**	20
	< 20	12	18	16	**	**	49
	20 +	576	187	91	103	30	987
Chelsea	All Ages	180	42	338	49	7	616
	< 18	**	**	23	**	**	29
	< 20	18	**	56	**	**	82
	20 +	162	38	282	47	5	534
Chicopee	All Ages	617	18	67	10	**	714
	< 18	13	**	9	0	0	23
	< 20	43	**	18	0	0	64
	20 +	574	15	49	10	**	650
Fall River	All Ages	1,215	25	31	41	5	1,317
	< 18	54	**	**	**	0	59
	< 20	169	**	**	6	0	182
	20 +	1,046	22	27	35	5	1,135



**Table 10. (continued)**  
**Births by Mother's Age, Race and Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1993**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Fitchburg	All Ages	416	22	112	38	13	601
	< 18	23	**	15	**	**	43
	< 20	55	5	34	5	**	101
	20 +	361	17	78	33	11	500
Haverhill	All Ages	816	17	85	12	6	936
	< 18	14	**	5	**	**	22
	< 20	64	**	17	**	**	84
	20 +	752	16	68	11	5	852
Holyoke	All Ages	287	17	478	6	8	796
	< 18	6	**	84	**	0	93
	< 20	23	**	174	**	**	204
	20 +	264	13	304	5	6	592
Lawrence	All Ages	457	22	932	30	5	1,446
	< 18	22	**	106	**	0	131
	< 20	66	**	242	**	**	315
	20 +	391	19	690	27	**	1,131
Leominster	All Ages	545	14	85	26	**	672
	< 18	8	0	10	**	0	19
	< 20	39	**	23	**	0	65
	20 +	506	13	62	24	**	607
Lowell	All Ages	1,127	61	339	406	12	1,945
	< 18	51	**	32	24	**	111
	< 20	121	9	83	51	**	266
	20 +	1,006	52	256	355	10	1,679
Lynn	All Ages	813	174	326	115	16	1,444
	< 18	31	13	34	10	0	88
	< 20	84	30	66	17	**	198
	20 +	729	144	260	98	15	1,246



**Table 10. (continued)**  
**Births by Mother's Age, Race and Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1993**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Methuen	All Ages	516	**	85	13	**	620
	< 18	12	**	8	0	0	21
	< 20	35	**	16	0	0	52
	20 +	481	**	69	13	**	568
New Bedford	All Ages	1,041	84	189	12	106	1,432
	< 18	58	12	26	**	12	109
	< 20	157	19	61	**	30	269
	20 +	884	65	128	10	76	1,163
Pittsfield	All Ages	552	24	6	8	10	600
	< 18	13	**	0	0	**	16
	< 20	42	7	0	0	**	50
	20 +	510	17	6	8	9	550
Quincy	All Ages	929	35	30	157	25	1,176
	< 18	13	0	**	**	**	17
	< 20	37	**	**	**	**	48
	20 +	892	33	27	153	23	1,128
Somerville	All Ages	595	153	181	69	30	1,028
	< 18	7	**	6	0	**	18
	< 20	32	10	15	**	6	65
	20 +	563	143	166	67	24	963
Southbridge	All Ages	210	**	70	**	**	284
	< 18	14	0	13	0	**	28
	< 20	30	0	23	0	**	54
	20 +	180	**	47	**	0	230
Springfield	All Ages	1,133	649	799	64	29	2,674
	< 18	34	68	151	**	**	261
	< 20	118	147	307	8	5	585
	20 +	1,015	502	492	56	24	2,089

**Table 10. (continued)**  
**Births by Mother's Age, Race and Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1993**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Taunton	All Ages	764	18	32	**	25	843
	< 18	30	**	**	0	**	36
	< 20	72	**	10	0	5	89
	20 +	692	16	22	**	20	754
Waltham	All Ages	534	58	95	64	7	758
	< 18	**	**	**	0	0	9
	< 20	30	**	16	0	**	48
	20 +	504	57	79	64	6	710
Westfield	All Ages	426	**	51	9	**	490
	< 18	16	0	6	0	0	22
	< 20	41	**	8	0	0	50
	20 +	385	**	43	9	**	440
Worcester	All Ages	1,756	218	566	153	32	2,725
	< 18	58	21	67	**	**	154
	< 20	193	48	144	13	9	407
	20 +	1,563	170	422	140	23	2,318
Massachusetts	All Ages	65,471	6,417	8,250	3,334	1,155	84,627 <sup>2</sup>
	< 18	1,095	434	816	77	75	2,497
	< 20	3,450	1,003	1,809	180	164	6,606
	20 +	62,018	5,413	6,439	3,154	991	78,015

Source: Registry of Vital Records and Statistics, MDPH, 1993.

\* non-Hispanic

\*\* Fewer than five observations

<sup>1</sup> 25 communities with the highest number of teen births.

<sup>2</sup> Includes births of unknown maternal age

**Table 11.**  
**Birth Characteristics Among Teen Mothers for Selected Communities<sup>1</sup>**  
**Massachusetts: 1993**

Community	Birthweight		Adequacy of Care <sup>2</sup>			Parity <sup>2</sup>	
	<2500 g	2500+ g	Adeq	Interm	Inad/ None	One	Two+
	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>
Attleboro	8.8	91.2	76.8	16.1	7.1	93.0	**
Boston	12.0	88.0	68.1	25.8	6.1	76.4	23.6
Brockton	7.5	92.5	46.7	39.7	13.6	82.2	17.8
Cambridge	6.1	93.9	61.2	26.5	12.2	87.5	12.5
Chelsea	11.0	89.0	47.6	39.0	13.4	76.8	23.2
Chicopee	7.8	92.2	64.1	34.4	1.6	85.9	14.1
Fall River	6.1	93.9	67.0	29.7	3.3	77.5	22.5
Fitchburg	16.8	83.2	63.0	30.0	7.0	67.3	32.7
Haverhill	8.3	91.7	76.2	20.2	3.6	76.2	23.8
Holyoke	9.8	90.2	44.3	38.4	17.2	63.7	36.3
Lawrence	10.3	89.7	84.7	11.8	3.5	65.3	34.7
Leominster	9.2	90.8	61.5	35.4	3.1	92.3	7.7
Lowell	10.2	89.8	62.0	28.2	9.8	77.4	22.6
Lynn	12.2	87.8	61.1	28.3	10.6	78.8	21.2
Methuen	10.0	90.0	84.6	11.5	3.8	78.8	21.2
New Bedford	6.3	93.7	74.8	20.3	4.9	79.1	20.9
Pittsfield	8.0	92.0	56.0	34.0	10.0	86.0	14.0
Quincy	4.2	95.8	72.9	22.9	4.2	87.5	12.5
Somerville	9.2	90.8	67.7	23.1	9.2	84.6	15.4
Southbridge	1.9	98.1	57.4	33.3	9.3	68.5	31.5
Springfield	8.9	91.1	54.3	35.6	10.1	72.0	28.0
Taunton	15.7	84.3	68.5	29.2	2.2	80.9	19.1
Waltham	14.9	85.1	63.6	27.3	9.1	77.1	22.9
Westfield	0.0	100.0	46.0	46.0	8.0	86.0	14.0
Worcester	8.8	91.2	73.0	22.9	4.2	74.9	25.1
Massachusetts	8.7	91.3	65.5	27.2	7.3	79.2	20.8

Source: Registry of Vital Records and Statistics, MDPH, 1993.

\*\* Fewer than five observations

<sup>1</sup> 25 communities with the highest number of teen births.

<sup>2</sup> See Glossary for definitions.

<sup>3</sup> Percentages are calculated only for cases where information is known.

**Table 12.**  
**Appropriate Grade Level<sup>1</sup> Among Teen Mothers**  
**for Selected Communities<sup>2</sup>**  
**Massachusetts: 1993**

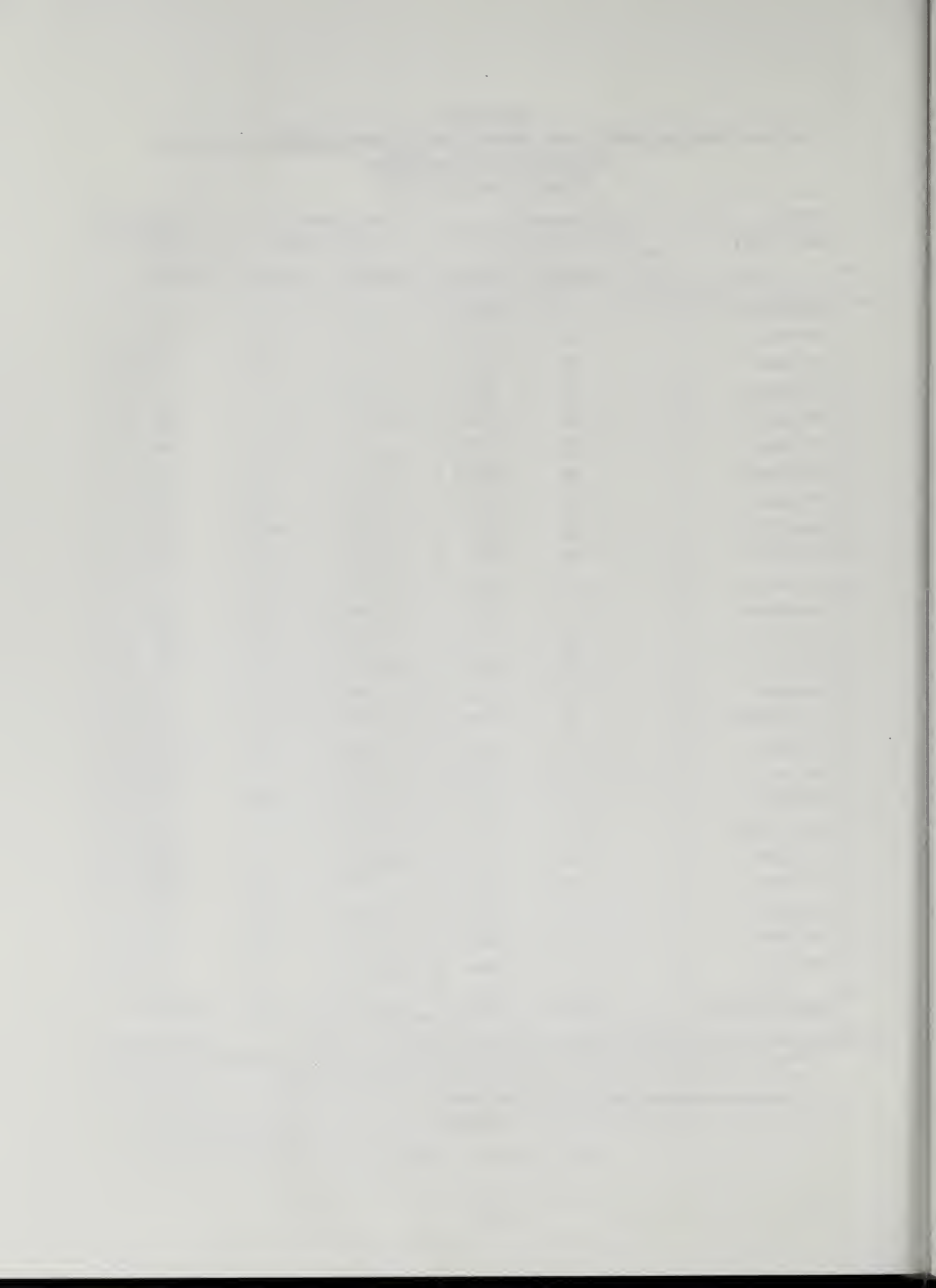
Community	Behind Grade Level <sup>1</sup>		At Grade Level <sup>1</sup>		Total <sup>3</sup>
	Number	Percent	Number	Percent	Number
Attleboro	13	22.8	44	77.2	57
Boston	283	27.6	739	72.0	1026
Brockton	69	32.2	144	67.3	214
Cambridge	13	26.5	36	73.5	49
Chelsea	26	31.7	56	68.3	82
Chicopee	23	35.9	41	64.1	64
Fall River	67	36.8	115	63.2	182
Fitchburg	47	46.5	53	52.5	101
Haverhill	35	41.7	49	58.3	84
Holyoke	96	47.1	108	52.9	204
Lawrence	136	43.2	178	56.5	315
Leominster	15	23.1	50	76.9	65
Lowell	103	38.7	163	61.3	266
Lynn	52	26.3	146	73.7	198
Methuen	13	25.0	38	73.1	52
New Bedford	79	29.4	189	70.3	269
Pittsfield	15	30.0	35	70.0	50
Quincy	12	25.0	36	75.0	48
Somerville	22	33.8	42	64.6	65
Southbridge	21	38.9	33	61.1	54
Springfield	222	37.9	363	62.1	585
Taunton	20	22.5	69	77.5	89
Waltham	15	31.3	33	68.8	48
Westfield	14	28.0	36	72.0	50
Worcester	148	36.4	259	63.6	407
Massachusetts	1,949	29.5	4,641	70.2	6,606

Source: Registry of Vital Records and Statistics, MDPH, 1993.

<sup>1</sup> Behind grade level defined as being one or more grades behind the maximum expected age for a grade at the time of delivery. See Glossary for definition.

<sup>2</sup> 25 communities with the highest number of teen births.

<sup>3</sup> Total includes records with unknown mother's education.





#### IV.

*Birth Characteristics  
for all 351 Communities  
and the 27 Community  
Health Network Areas*



**Table 13**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Abington	200	4	13	10	7
Acton	245	1	3	0	**
Acushnet	81	2	8	8	**
Adams	108	1	7	**	5
Agawam	315	1	9	7	6
Alford	4	0	0	0	0
Amesbury	255	5	16	12	12
Amherst	199	8	10	**	7
Andover	326	4	7	**	5
Arlington	550	1	5	**	3
Ashburnham	65	1	2	**	**
Ashby	29	1	2	**	0
Ashfield	26	1	1	**	**
Ashland	234	2	4	**	**
Athol	149	7	25	22	18
Attleboro	658	23	57	44	36
Auburn	180	2	8	7	**
Avon	65	0	2	**	**
Ayer	128	4	11	6	8
Barnstable	518	7	31	22	27
Barre	76	3	7	6	6
Becket	25	2	4	**	**
Bedford	222	1	6	**	5

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Belchertown	150	1	9	**	6
Bellingham	218	5	16	12	12
Belmont	306	0	0	0	0
Berkley	90	0	1	**	0
Berlin	32	0	0	0	0
Bernardston	14	0	1	0	0
Beverly	534	8	26	14	17
Billerica	578	6	20	11	11
Blackstone	111	1	9	8	**
Blandford	20	1	3	**	**
Bolton	46	0	0	0	0
Boston	8,808	407	1,026	749	742
Bourne	240	5	13	10	8
Boxborough	54	0	1	0	**
Boxford	78	0	0	0	0
Boylston	54	1	1	**	0
Braintree	391	4	8	5	5
Brewster	80	2	2	**	0
Bridgewater	258	5	13	7	7
Brimfield	40	1	3	**	**
Brockton	1,572	86	214	121	165
Brookfield	47	2	4	**	**
Brookline	625	3	9	**	6

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Buckland	14	1	1	0	**
Burlington	294	4	6	**	**
Cambridge	1,039	20	49	34	31
Canton	247	2	5	**	**
Carlisle	57	0	1	0	**
Carver	137	3	6	**	**
Charlemont	10	0	1	**	0
Charlton	152	1	8	7	6
Chatham	53	0	1	**	**
Chelmsford	437	2	6	5	5
Chelsea	616	29	82	46	70
Cheshire	38	0	0	0	0
Chester	16	1	2	**	**
Chesterfield	9	0	0	0	0
Chicopee	714	23	64	47	52
Chilmark	8	0	0	0	0
Clarksburg	16	1	2	0	**
Clinton	209	6	13	10	6
Cohasset	87	0	1	0	**
Colrain	19	0	0	0	0
Concord	169	0	1	0	0
Conway	12	0	0	0	0
Cummington	14	0	1	**	0



**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Dalton	84	2	8	5	**
Danvers	268	4	7	6	**
Dartmouth	222	5	12	9	7
Dedham	288	3	8	6	**
Deerfield	54	1	2	0	**
Dennis	116	3	13	9	10
Dighton	73	2	4	**	**
Douglas	87	0	3	**	**
Dover	69	0	0	0	0
Dracut	418	1	9	7	**
Dudley	117	1	6	**	**
Dunstable	36	0	0	0	0
Duxbury	131	0	1	0	**
East Bridgewater	165	2	11	8	**
East Brookfield	29	1	2	**	**
East Longmeadow	115	3	7	**	**
Eastham	41	0	1	**	**
Easthampton	209	7	20	15	16
Easton	260	2	7	**	**
Edgartown	39	0	2	**	**
Egremont	17	0	1	0	0
Erving	11	1	1	**	0
Essex	61	2	3	**	**

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Everett	549	10	27	18	19
Fairhaven	175	6	17	13	13
Fall River	1,317	59	182	127	157
Falmouth	311	10	28	20	20
Fitchburg	601	43	101	67	86
Florida	9	0	1	0	**
Foxborough	199	0	6	**	**
Framingham	941	17	42	38	35
Franklin	456	4	11	**	8
Freetown	89	1	3	**	**
Gardner	296	9	34	23	30
Gay Head	1	0	0	0	0
Georgetown	96	3	5	**	**
Gill	12	0	0	0	0
Gloucester	369	8	25	18	18
Goshen	8	0	0	0	0
Gosnold	0	0	0	0	0
Grafton	202	0	9	8	**
Granby	81	2	4	**	**
Granville	16	0	0	0	0
Great Barrington	81	3	5	4	**
Greenfield	228	13	33	26	21
Groton	154	0	2	**	**

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Groveland	67	0	2	**	**
Hadley	54	0	0	0	0
Halifax	84	1	1	0	**
Hamilton	115	0	0	0	0
Hampden	41	0	1	**	0
Hancock	5	0	0	0	0
Hanover	141	0	5	**	**
Hanson	118	0	3	**	**
Hardwick	27	3	5	**	**
Harvard	191	3	9	5	8
Harwich	110	1	6	**	6
Hatfield	35	0	0	0	0
Haverhill	936	22	84	67	71
Hawley	6	0	1	**	**
Heath	7	0	1	**	0
Hingham	234	1	2	0	0
Hinsdale	20	0	2	**	**
Holbrook	147	5	9	7	**
Holden	166	2	4	**	**
Holland	32	0	0	0	0
Holliston	157	0	2	**	**
Holyoke	796	93	204	110	197
Hopedale	79	0	1	0	**

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Hopkinton	197	1	2	**	0
Hubbardston	63	0	0	0	0
Hudson	271	3	10	8	**
Hull	144	2	6	5	6
Huntington	35	1	3	**	**
Ipswich	116	2	6	**	**
Kingston	155	2	6	**	**
Lakeville	111	2	4	**	**
Lancaster	59	1	1	**	0
Lanesborough	39	0	0	0	0
Lawrence	1,446	131	315	277	275
Lee	65	0	1	**	**
Leicester	138	2	10	8	6
Lenox	46	3	5	5	**
Leominster	672	19	65	43	44
Leverett	10	0	0	0	0
Lexington	275	1	1	0	0
Leyden	8	0	0	0	0
Lincoln	59	0	0	0	0
Littleton	116	1	1	**	0
Longmeadow	136	0	2	**	**
Lowell	1,945	111	266	169	209
Ludlow	199	2	7	6	**



**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Lunenburg	98	0	1	0	**
Lynn	1,444	88	198	131	162
Lynnfield	116	0	1	**	**
Malden	793	12	40	22	25
Manchester	69	0	2	**	**
Mansfield	383	2	9	8	7
Marblehead	266	1	1	0	**
Marion	42	1	5	**	**
Marlborough	562	10	29	23	13
Marshfield	323	3	9	5	5
Mashpee	156	2	8	7	6
Mattapoisett	59	0	0	0	0
Maynard	169	3	5	**	**
Medfield	169	1	1	0	0
Medford	663	6	17	12	9
Medway	175	0	2	**	**
Melrose	327	1	5	**	**
Mendon	76	0	4	**	**
Merrimac	55	1	2	**	**
Methuen	620	21	52	48	35
Middleborough	271	5	25	18	14
Middlefield	5	0	0	0	0
Middleton	50	0	3	**	**



**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Milford	382	8	27	19	23
Millbury	189	3	10	9	5
Millis	154	1	3	**	**
Millville	56	1	5	**	**
Milton	289	2	2	**	**
Monroe	1	0	1	**	**
Monson	75	0	1	0	**
Montague	106	4	15	12	10
Monterey	9	0	0	0	0
Montgomery	6	0	0	0	0
Mount Washington	3	0	0	0	0
Nahant	39	0	0	0	0
Nantucket	103	0	2	**	**
Natick	487	1	3	**	**
Needham	367	0	2	**	**
New Ashford	0	0	0	0	0
New Bedford	1,432	109	269	207	226
New Braintree	6	0	0	0	0
New Marlborough	11	1	1	**	**
New Salem	14	1	2	**	**
Newbury	71	0	2	**	**
Newburyport	198	7	8	7	6
Newton	928	3	8	7	**

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Norfolk	151	0	0	0	0
North Adams	180	6	29	25	22
North Andover	290	2	6	5	**
North Attleborough	409	4	11	8	**
North Brookfield	53	1	2	**	**
North Reading	192	0	5	5	**
Northampton	280	10	24	16	20
Northborough	177	1	4	**	**
Northbridge	178	8	20	14	10
Northfield	28	1	1	**	**
Norton	256	2	6	**	**
Norwell	102	0	2	**	**
Norwood	365	10	18	12	11
Oak Bluffs	41	0	3	**	**
Oakham	25	0	0	0	0
Orange	112	5	17	14	12
Orleans	42	0	2	**	**
Otis	20	0	0	0	0
Oxford	150	5	10	10	5
Palmer	165	5	12	10	7
Paxton	35	0	0	0	0
Peabody	638	9	24	17	16
Pelham	15	0	0	0	0

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Pembroke	266	4	9	8	6
Pepperell	159	2	5	5	0
Peru	12	1	1	**	0
Petersham	13	0	1	**	**
Phillipston	10	1	2	**	**
Pittsfield	600	16	50	32	40
Plainfield	8	0	0	0	0
Plainville	118	0	3	**	**
Plymouth	713	15	39	24	22
Plympton	27	0	0	0	0
Princeton	39	0	1	**	**
Provincetown	21	0	2	**	0
Quincy	1,176	17	48	38	34
Randolph	412	6	23	17	11
Raynham	120	2	5	**	**
Reading	267	0	4	**	**
Rehoboth	87	0	4	**	**
Revere	582	12	32	26	26
Richmond	16	0	0	0	0
Rochester	48	0	3	**	0
Rockland	261	2	13	9	8
Rockport	66	0	1	**	**
Rowe	3	0	0	0	0

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Rowley	78	0	2	**	**
Royalston	7	0	0	0	0
Russell	30	4	4	**	**
Rutland	64	1	1	**	**
Salem	561	13	44	36	39
Salisbury	83	1	10	6	9
Sandisfield	13	1	1	**	0
Sandwich	221	3	8	6	5
Saugus	306	3	10	9	6
Savoy	6	0	0	0	0
Scituate	243	4	4	**	**
Seekonk	135	3	5	**	**
Sharon	200	0	1	0	**
Sheffield	38	0	3	**	**
Shelburne	21	0	1	0	**
Sherborn	34	0	0	0	0
Shirley	72	3	5	**	**
Shrewsbury	380	4	13	10	6
Shutesbury	16	0	0	0	0
Somerset	144	5	7	5	**
Somerville	1,028	18	65	47	47
South Hadley	171	3	7	6	5
Southampton	65	1	2	**	**



**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Southborough	103	1	2	**	**
Southbridge	284	28	54	32	47
Southwick	87	1	2	**	**
Spencer	172	5	15	12	7
Springfield	2,674	261	585	367	512
Sterling	83	0	4	**	**
Stockbridge	16	0	1	0	**
Stoneham	255	1	7	5	**
Stoughton	350	5	11	8	6
Stow	69	1	1	**	**
Sturbridge	91	0	6	5	6
Sudbury	196	1	3	**	0
Sunderland	44	2	5	**	5
Sutton	111	0	3	**	**
Swampscott	154	0	1	**	0
Swansea	164	2	7	5	**
Taunton	843	36	89	69	49
Templeton	83	0	1	**	**
Tewksbury	470	3	7	**	**
Tisbury	41	1	7	6	5
Tolland	6	0	0	0	0
Topsfield	79	0	4	**	**
Townsend	126	2	7	5	5



**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Truro	16	0	1	**	**
Tyngsborough	115	0	2	**	**
Tyringham	2	0	0	0	0
Upton	98	1	1	**	0
Uxbridge	142	0	3	**	**
Wakefield	327	6	13	10	6
Wales	23	1	2	**	**
Walpole	299	1	3	**	**
Waltham	758	9	48	33	36
Ware	146	6	22	14	14
Wareham	251	8	27	21	13
Warren	60	3	6	5	**
Warwick	7	0	1	**	0
Washington	9	0	1	0	0
Watertown	406	4	7	6	**
Wayland	144	1	1	**	0
Webster	234	10	25	16	18
Wellesley	321	1	2	**	**
Wellfleet	25	0	1	**	**
Wendell	11	0	1	**	**
Wenham	29	0	0	0	0
West Boylston	64	1	1	**	0
West Bridgewater	72	2	7	6	**

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
West Brookfield	34	0	2	**	**
West Newbury	42	0	0	0	0
West Springfield	384	6	32	22	23
West Stockbridge	9	0	0	0	0
West Tisbury	25	1	1	**	**
Westborough	198	0	3	**	**
Westfield	490	22	50	26	36
Westford	252	1	5	**	**
Westhampton	20	0	1	**	**
Westminster	68	0	2	**	**
Weston	99	0	0	0	0
Westport	127	4	9	6	**
Westwood	159	1	2	**	0
Weymouth	754	10	20	13	8
Whately	20	0	0	0	0
Whitman	210	3	12	9	6
Wilbraham	131	1	3	**	**
Williamsburg	29	0	0	0	0
Williamstown	48	1	2	**	**
Wilmington	295	0	9	6	7
Winchendon	112	7	13	6	9
Winchester	246	0	1	**	**
Windsor	18	0	0	0	0

**Table 13. (continued)**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1993**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care ( < 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Winthrop	227	6	8	5	**
Woburn	473	5	16	13	9
Worcester	2,725	154	407	310	314
Worthington	12	0	0	0	0
Wrentham	150	0	0	0	0
Yarmouth	204	4	13	11	12
Massachusetts	84,627	2,497	6,606	4,664	4,903

Source: Registry of Vital Records and Statistics, MDPH, 1993.

\*\* Fewer than five observations.

**Table 14.**  
**Number of Births by Mother's Age & Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1993**

Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
1 Pittsfield Area	1,567	38	125	85	84
2 Greenfield Area	993	38	114	90	79
3 Holyoke/Chicopee/Northampton Area	3,435	163	392	242	335
4 Springfield Area	4,451	300	698	435	588
5 Southbridge Area	1,593	59	146	104	105
6 Milford Area	2,769	29	108	75	70
7 Framingham/Marlborough Area	4,294	44	115	97	65
8 Worcester Area	4,133	169	463	358	337
9 Fitchburg/Gardner Area	3,551	108	292	194	217
10 Lowell Area	4,251	124	315	202	237
11 Lawrence Area	2,732	158	383	336	320
12 Haverhill Area	1,959	39	131	100	105
13 Beverly/Gloucester Area	1,438	20	67	42	42
14 Lynn/Salem Area	3,676	118	285	200	228
15 Woburn Area	3,989	21	81	53	44
16 Medford/Malden Area	3,430	75	206	129	152
17 Cambridge/Somerville Area	3,329	43	126	91	84
18 Newton/Waltham Area	3,614	20	79	56	52
19 City of Boston	8,808	407	1026	749	742
20 Quincy Area	3,781	56	133	96	76

**Table 14. (continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1993**

Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
21 Attleboro Area	2,223	31	93	71	55
22 Brockton Area	3,152	109	290	174	203
23 Plymouth Area	3,166	37	107	64	66
24 Taunton Area	1,730	50	137	105	70
25 Fall River Area	1,752	70	205	143	167
26 New Bedford Area	2,399	132	344	265	269
27 Cape/Islands Area	2,412	39	145	108	111
Massachusetts	84,627	2,497	6,606	4,664	4,903

Source: Registry of Vital Records and Statistics, MDPH, 1993.

<sup>1</sup> See Appendix for Community Health Network Area definition and city/town groupings.



## *Appendix*



## *Glossary*

**Adequacy of prenatal care:** Adequacy of prenatal care is calculated from information reported by the birth hospital. The index of Adequacy of Prenatal Care (based on the Kessner Index) has three categories (adequate, intermediate, inadequate/none) based on the trimester in which prenatal care began and the number of prenatal visits. The general classification scheme is:

<u>Category</u>	<u>Trimester Care Began</u>	<u>Number of Visits</u>
Adequate	1	9 or more
Intermediate	1	5-8
	2	5 or more
Inadequate/None	1	1-4
	2	1-4
	3	1 or more

The classification is adjusted for gestational age to allow for proper classification of premature infants.

**Birth Rate:** see Teen Birth Rate.

**Birthweight Categories:** Birthweight is the weight of an infant recorded at the time of delivery.

**Normal Birthweight (NBW):** An infant's weight of 2,500 grams (5.5 pounds) or more

**Low Birthweight (LBW):** An infant's weight of less than 2,500 grams (5.5 pounds)

**Very Low Birthweight (VLBW):** An infant's weight of less than 1,500 grams (3.3 pounds)

**Education:** Education is self-reported on the birth certificate by the mother and indicates the highest grade or total number of years of schooling she completed.

**Age-Appropriate Grade Level:** Refers to the maximum expected age of a student in a particular school grade. Teen mothers were classified as being at least one grade behind if they were 2 or more years older than the maximum expected age for the reported grade level. For example, if a teen is 16 years old and reports she has completed 8th grade, then she is at least one year behind the expected age for that grade. The following age-for grade cutoffs were used:

<u>Grade</u>	<u>Maximum Expected Age</u>
6th	12
7th	13
8th	14
9th	15
10th	16
11th	17
12th	18

**Gestational Age:** The length of time a fetus is in utero before birth. In this publication, the clinical estimate of gestational age has been used for analysis. Clinical gestational age is determined by the attendant at birth or a physician providing postnatal care to the newborn. A normal gestational age is defined as delivery between the completion of the 37th and the 42nd week of pregnancy.

**Healthy Start:** Healthy Start is a Massachusetts-funded program providing services and financing for prenatal care to low-income (up to 200% of the poverty level) pregnant women who lack health insurance but do not qualify for Medicaid.

**Live Birth:** A live birth is defined as any infant who breathes or shows any other evidence of life (such as beating of the heart, pulsation of the umbilical code, or definite movement of voluntary muscles) after delivery. All figures and tables in this report, showing Massachusetts data, are based on live births to Massachusetts residents (see Resident Birth).

**Low Birthweight:** see Birthweight Categories.

**Normal Birthweight:** see Birthweight Categories.

**Mother's Age:** Mother's age is computed from her date of birth and the date of delivery.

**Parity:** The number of live infants ever born to the mother. Parity includes all previous live births as well as the infant named on the birth certificate.

**Prenatal Care Payment Source:** Prenatal care payment source is self-reported by the mother. Groupings include:

- Private: Blue Cross/Blue Shield, commercial insurance, and health maintenance organizations (HMOs). HMO may include Medicaid recipients in managed care programs.
- Public: Medicaid, Healthy Start, Medicare and other government sources (e.g., CHAMPUS).
- Uninsured: Care paid for out of pocket or provided free of charge.
- Other: Workers' Compensation and other specified types of funding not classified elsewhere.

**Race/Ethnicity:** Mother's race and ethnicity are self-reported.

**Resident Birth:** Resident birth is defined as the birth of an infant whose mother reports her usual place of residence is Massachusetts. In Massachusetts, a resident is a person with a permanent address in one of the 351 cities or towns. Massachusetts resident births include all births that occur to residents of the Commonwealth whether they occur in Massachusetts or elsewhere.

**Teen Birth Rate:** The number of children born among females ages 15 to 19 divided by the population of females in that age group, multiplied by 1,000.

**Very Low Birthweight:** see Birthweight Categories.



**1993 Population Estimates of Females Aged 15 to 19 Years Living in  
25 Massachusetts Communities with the Highest Number of  
Teen Births in 1993**

<u>Community</u>	<u>Number of Females, Aged 15-19 years</u>
Attleboro	1,201
Boston	21,460
Brockton	3,234
Cambridge	3,082
Chelsea	881
Chicopee	1,863
Fall River	3,180
Fitchburg	1,768
Haverhill	1,681
Holyoke	1,445
Lawrence	2,652
Leominster	1,184
Lowell	3,890
Lynn	2,428
Methuen	1,310
New Bedford	3,417
Pittsfield	1,525
Quincy	2,283
Somerville	2,064
Southbridge	577
Springfield	5,860
Taunton	1,584
Waltham	2,342
Westfield	1,670
Worcester	6,582

Massachusetts Cities, Towns, Counties, and Community Health Network Area (CHNAs)

City/Town	County	CHNA	City/Town	County	CHNA
Abington	Plymouth	22	Dartmouth	Bristol	26
Acton	Middlesex	15	Dedham	Norfolk	18
Acushnet	Bristol	26	Deerfield	Franklin	2
Adams	Berkshire	1	Dennis	Barnstable	27
Agawam	Hampden	4	Dighton	Bristol	24
Alford	Berkshire	1	Douglas	Worcester	6
Amesbury	Essex	12	Dover	Norfolk	18
Amherst	Hampshire	3	Dracut	Middlesex	10
Andover	Essex	11	Dudley	Worcester	5
Arlington	Middlesex	17	Dunstable	Middlesex	10
Ashburnham	Worcester	9	Duxbury	Plymouth	23
Ashby	Middlesex	9	East Bridgewater	Plymouth	22
Ashfield	Franklin	2	East Brookfield	Worcester	5
Ashland	Middlesex	7	East Longmeadow	Hampden	4
Athol	Worcester	2	Eastham	Barnstable	27
Attleboro	Bristol	21	Easthampton	Hampshire	3
Auburn	Worcester	8	Easton	Bristol	22
Avon	Norfolk	22	Edgartown	Dukes	27
Ayer	Middlesex	9	Egremont	Berkshire	1
Barnstable	Barnstable	27	Erving	Franklin	2
Barre	Worcester	9	Essex	Essex	13
Becket	Berkshire	1	Everett	Middlesex	16
Bedford	Middlesex	15	Fairhaven	Bristol	26
Belchertown	Hampshire	3	Fall River	Bristol	25
Bellingham	Norfolk	6	Falmouth	Barnstable	27
Belmont	Middlesex	17	Fitchburg	Worcester	9
Berkley	Bristol	24	Florida	Berkshire	1
Berlin	Worcester	7	Foxborough	Norfolk	21
Bernardston	Franklin	2	Framingham	Middlesex	7
Beverly	Essex	13	Franklin	Norfolk	6
Billerica	Middlesex	10	Freetown	Bristol	26
Blackstone	Worcester	6	Gardner	Worcester	9
Blandford	Hampden	4	Gay Head	Dukes	27
Bolton	Worcester	9	Georgetown	Essex	12
Boston	Suffolk	19	Gill	Franklin	2
Bourne	Barnstable	27	Gloucester	Essex	13
Boxborough	Middlesex	15	Goshen	Hampshire	3
Boxford	Essex	12	Gosnold	Dukes	27
Boylston	Worcester	8	Grafton	Worcester	8
Braintree	Norfolk	20	Granby	Hampshire	3
Brewster	Barnstable	27	Granville	Hampden	4
Bridgewater	Plymouth	22	Great Barrington	Berkshire	1
Brimfield	Hampden	5	Greenfield	Franklin	2
Brockton	Plymouth	22	Groton	Middlesex	9
Brookfield	Worcester	5	Groveland	Essex	12
Brookline	Norfolk	18	Hadley	Hampshire	3
Buckland	Franklin	2	Halifax	Plymouth	23
Burlington	Middlesex	15	Hamilton	Essex	13
Cambridge	Middlesex	17	Hampden	Hampden	4
Canton	Norfolk	20	Hancock	Berkshire	1
Carlisle	Middlesex	15	Hanover	Plymouth	23
Carver	Plymouth	23	Hanson	Plymouth	23
Charlemont	Franklin	2	Hardwick	Worcester	9
Charlton	Worcester	5	Harvard	Worcester	9
Chatham	Barnstable	27	Harwich	Barnstable	27
Chelmsford	Middlesex	10	Hatfield	Hampshire	3
Chelsea	Suffolk	16	Haverhill	Essex	12
Cheshire	Berkshire	1	Hawley	Franklin	2
Chester	Hampden	3	Heath	Franklin	2
Chesterfield	Hampshire	3	Hingham	Plymouth	23
Chicopee	Hampden	3	Hinsdale	Berkshire	1
Chilmark	Dukes	27	Holbrook	Norfolk	20
Clarksburg	Berkshire	1	Holden	Worcester	8
Clinton	Worcester	9	Holland	Hampden	5
Cohasset	Norfolk	23	Holliston	Middlesex	7
Colrain	Franklin	2	Holyoke	Hampden	3
Concord	Middlesex	15	Hopedale	Worcester	6
Conway	Franklin	2	Hopkinton	Middlesex	7
Cummington	Hampshire	3	Hubbardston	Worcester	9
Dalton	Berkshire	1	Hudson	Middlesex	7
Danvers	Essex	14	Hull	Plymouth	23

City/Town	County	CHNA	City/Town	County	CHNA
Huntington	Hampshire	3	Northampton	Hampshire	3
Ipswich	Essex	13	Northborough	Worcester	7
Kingston	Plymouth	23	Northbridge	Worcester	6
Lakeville	Plymouth	24	Northfield	Franklin	2
Lancaster	Worcester	9	Norton	Bristol	21
Lanesborough	Berkshire	1	Norwell	Plymouth	23
Lawrence	Essex	11	Norwood	Norfolk	20
Lee	Berkshire	1	Oak Bluffs	Dukes	27
Leicester	Worcester	8	Oakham	Worcester	9
Lenox	Berkshire	1	Orange	Franklin	2
Leominster	Worcester	9	Orleans	Barnstable	27
Leverett	Franklin	2	Otis	Berkshire	1
Lexington	Middlesex	15	Oxford	Worcester	5
Leyden	Franklin	2	Palmer	Hampden	3
Lincoln	Middlesex	15	Paxton	Worcester	8
Littleton	Middlesex	15	Peabody	Essex	14
Longmeadow	Hampden	4	Pelham	Hampshire	3
Lowell	Middlesex	10	Pembroke	Plymouth	23
Ludlow	Hampden	3	Pepperell	Middlesex	9
Lunenburg	Worcester	9	Peru	Berkshire	1
Lynn	Essex	14	Petersham	Worcester	2
Lynnfield	Essex	15	Phillipston	Worcester	2
Malden	Middlesex	16	Pittsfield	Berkshire	1
Manchester	Essex	13	Plainfield	Hampshire	3
Mansfield	Bristol	21	Plainville	Norfolk	21
Marblehead	Essex	14	Plymouth	Plymouth	23
Marion	Plymouth	26	Plympton	Plymouth	23
Marlborough	Middlesex	7	Princeton	Worcester	9
Marshfield	Plymouth	23	Provincetown	Barnstable	27
Mashpee	Barnstable	27	Quincy	Norfolk	20
Mattapoisett	Plymouth	26	Randolph	Norfolk	20
Maynard	Middlesex	7	Raynham	Bristol	24
Medfield	Norfolk	7	Reading	Middlesex	15
Medford	Middlesex	16	Rehoboth	Bristol	24
Medway	Norfolk	6	Revere	Suffolk	16
Melrose	Middlesex	15	Richmond	Berkshire	1
Mendon	Worcester	6	Rochester	Plymouth	26
Merrimac	Essex	12	Rockland	Plymouth	23
Methuen	Essex	11	Rockport	Essex	13
Middleborough	Plymouth	24	Rowe	Franklin	2
Middlefield	Hampshire	3	Rowley	Essex	12
Middleton	Essex	11	Royalston	Worcester	2
Millford	Worcester	6	Russell	Hampden	4
Millbury	Worcester	8	Rutland	Worcester	9
Millis	Norfolk	7	Salem	Essex	14
Millville	Worcester	6	Salisbury	Essex	12
Milton	Norfolk	20	Sandisfield	Berkshire	1
Monroe	Franklin	2	Sandwich	Barnstable	27
Monson	Hampden	5	Saugus	Essex	14
Montague	Franklin	2	Savoy	Berkshire	1
Monterey	Berkshire	1	Scituate	Plymouth	23
Montgomery	Hampden	4	Seekonk	Bristol	24
Mt. Washington	Berkshire	1	Sharon	Norfolk	21
Nahant	Essex	14	Sheffield	Berkshire	1
Nantucket	Nantucket	27	Shelburne	Franklin	2
Natick	Middlesex	7	Sherborn	Middlesex	7
Needham	Norfolk	18	Shirley	Middlesex	9
New Ashford	Berkshire	1	Shrewsbury	Worcester	8
New Bedford	Bristol	26	Shutesbury	Franklin	2
New Braintree	Worcester	9	Somerset	Bristol	25
New Marlborough	Berkshire	1	Somerville	Middlesex	17
New Salem	Franklin	2	South Hadley	Hampshire	3
Newbury	Essex	12	Southampton	Hampshire	3
Newburyport	Essex	12	Southborough	Worcester	7
Newton	Middlesex	18	Southbridge	Worcester	5
Norfolk	Norfolk	6	Southwick	Hampden	4
North Adams	Berkshire	1	Spencer	Worcester	5
North Andover	Essex	11	Springfield	Hampden	4
N. Attleborough	Bristol	21	Sterling	Worcester	9
North Brookfield	Worcester	5	Stockbridge	Berkshire	1
North Reading	Middlesex	15	Stoneham	Middlesex	15

City/Town	County	CHNA	
Stoughton	Norfolk	22	
Stow	Middlesex	7	
Sturbridge	Worcester	5	
Sudbury	Middlesex	7	
Sunderland	Franklin	2	
Sutton	Worcester	6	
Swampscott	Essex	14	
Swansea	Bristol	25	
Taunton	Bristol	24	
Templeton	Worcester	9	
Tewksbury	Middlesex	10	
Tisbury	Dukes	27	
Tolland	Hampden	4	
Topsfield	Essex	13	
Townsend	Middlesex	9	
Truro	Barnstable	27	
Tyngsborough	Middlesex	10	
Tyringham	Berkshire	1	
Upton	Worcester	6	
Uxbridge	Worcester	6	
Wakefield	Middlesex	15	
Wales	Hampden	5	
Walpole	Norfolk	6	
Waltham	Middlesex	18	
Ware	Hampshire	3	
Wareham	Plymouth	26	
Warren	Worcester	5	
Warwick	Franklin	2	
Washington	Berkshire	1	
Watertown	Middlesex	17	
Wayland	Middlesex	7	
Webster	Worcester	5	
Wellesley	Norfolk	18	
Wellfleet	Barnstable	27	
Wendell	Franklin	2	
Wenham	Essex	13	
West Boylston	Worcester	8	
West Bridgewater	Plymouth	22	
West Brookfield	Worcester	5	
West Newbury	Essex	12	
West Springfield	Hampden	4	
West Stockbridge	Berkshire	1	
West Tisbury	Dukes	27	
Westborough	Worcester	7	
Westfield	Hampden	4	
Westford	Middlesex	10	
Westhampton	Hampshire	3	
Westminster	Worcester	9	
Weston	Middlesex	18	
Westport	Bristol	25	
Westwood	Norfolk	18	
Weymouth	Norfolk	20	
Whately	Franklin	2	
Whitman	Plymouth	22	
Wilbraham	Hampden	4	
Williamsburg	Hampshire	3	
Williamstown	Berkshire	1	
Wilmington	Middlesex	15	
Winchendon	Worcester	9	
Winchester	Middlesex	15	
Windsor	Berkshire	1	
Winthrop	Suffolk	16	
Woburn	Middlesex	15	
Worcester	Worcester	8	
Worthington	Hampshire	3	
Wrentham	Norfolk	6	
Yarmouth	Barnstable	27	

#### Community Health Network Areas

1. Pittsfield
2. Greenfield
3. Holyoke/Chicopee/Northampton
4. Springfield
5. Southbridge
6. Milford
7. Framingham/Marlborough
8. Worcester
9. Fitchburg/Gardner
10. Lowell
11. Lawrence
12. Haverhill
13. Beverly/Gloucester
14. Lynn/Salem
15. Woburn
16. Medford/Malden
17. Cambridge/Somerville
18. Newton/Waltham
19. City of Boston
20. Quincy
21. Attleboro
22. Brockton
23. Plymouth
24. Taunton
25. Fall River
26. New Bedford
27. Cape/Islands









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# ***Adolescent Births: A Statistical Profile***

## ***Massachusetts 1994***

### **Supplement to Advance Data BIRTHS 1994**

***Massachusetts Department of Public Health  
Bureau of Family and Community Health, Office of Statistics and Evaluation  
Bureau of Health Statistics, Research and Evaluation***

***March 1996***

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# ***Adolescent Births: A Statistical Profile***

***Massachusetts  
1994***

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Argeo Paul Cellucci, Lieutenant Governor

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# Executive Summary

## Introduction

*Adolescent Births: A Statistical Profile, Massachusetts, 1994* is a supplement to the publication *Advance Data BIRTHS 1994*, and presents selected annual statistics and trend data on births among adolescent women in Massachusetts, as well as comparisons with national data. Four sections cover demographic and birth characteristics and teen birth trends for the state as a whole; birthweight, gestational age, and adequacy of prenatal care; teen birth rates and birth characteristics for each of the 25 communities with the highest number of teen births in 1994; and teen birth characteristics for each of the 351 Massachusetts communities and for each of the 27 Community Health Network Areas (CHNAs). Teen births refer to births to resident Massachusetts women under 20 years old, unless specified otherwise. Massachusetts data are from the Registry of Vital Records and Statistics, Massachusetts Department of Public Health (MDPH). United States data are from the Centers for Disease Control and Prevention/National Center for Health Statistics (NCHS).

Overall, Massachusetts continues to have a low teen birth rate relative to most other states and the nation as a whole.<sup>1</sup> However, some Massachusetts communities have community-specific teen birth rates that are higher than, and in some cases double, the national rate. Moreover, there are still disparities across race/Hispanic ethnicity subgroups in percent low birthweight births and receipt of adequate prenatal care. The data presented in this profile are intended to present information that will assist those planning programs, provide evaluators and researchers with reference measures, and assist policy makers in their efforts to address adolescent health issues.

## Summary

### I. State-Wide Demographic and Birth Characteristics

#### Number and Percentage of Births to Women under Age 20

- In 1994, 6,567 infants were born to Massachusetts women under age 20, a 15.4% decline since 1980, and an 11.0% decline since 1990. This decline is due in part to the decrease in the number and proportion of females ages 12-19 living in Massachusetts from 420,353 (14.2% of all Massachusetts women) in 1970 to 305,509 (9.8%) in 1990.
- The percentage of all births born to Massachusetts women under age 20 remained the same in 1994 (7.8%) as it was the previous year.

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<sup>1</sup> National Center for Health Statistics, Department of Health and Human Services, *Vital Statistics of the United States, 1992, Vol. 1, Natality*.

### **Birth Rates among Women Ages 15-19**

- The number of teen births per 1,000 women ages 15-19 continued to decline, reaching a new six-year low of 31.2 in 1994. This rate, however, is higher than the 1980 rate of 28.1. The 1994 rate was a little over half the 1993 national teen birth rate of 59.6.

### **Age Distribution of Teen Mothers**

- The overall distribution of teen births by mother's age has varied little in the past five years, with 18 to 19 year old women accounting for just over 60% of all teen births. In 1994, over one-third (37%) of all teen births were among 15-17 year olds, and 2.4% were among teens under age 15.
- The distribution of teen births by mother's age varied across race/Hispanic ethnicity groups. A lower proportion of white non-Hispanic teen births had mothers under age 18 (33.7%) than Hispanic, black, or Asian teen births (47.3%, 42.4%, 45.7%, respectively).

### **Race/Hispanic Ethnicity Distribution of Teen Births**

- In 1994, 3,303 (50.3%) of all teen births were to white non-Hispanic mothers; 1,950 (29.7%) were to Hispanic mothers; 997 (15.2%) were to black non-Hispanic mothers; and 188 (2.9%) were to Asian mothers.

### **Mother's Place of Birth**

- In 1994, 78.1% of teen births and 81.4% of births to older women (age 20 and over) were to mothers who were born in the United States.

### **Previous Live Births**

- One in five teen births (20.3%) in 1994 were to teen mothers who had at least one previous live birth (multiparous mothers); nearly one in twenty (4.1%) teen births were to mothers who had at least two previous live births.
- More than one in four teen births (26.3%) were to multiparous mothers ages 18-19, whereas 11.2% of teen births were to multiparous mothers ages 12-17.

### **Prenatal Care Payment Source**

- Teen mothers received publicly-funded prenatal care at higher levels than mothers age 20 and over. In 1994, 73.9% of teen mothers received publicly-funded prenatal care compared to 23.4% of mothers age 20 and over.

## **Marital Status**

- Of all teen women giving birth in 1994, 89.6% were unmarried. The percent of births to unmarried teens grew from 56.9% in 1980, to 83.3% in 1990. This trend is also reflected among births to women age 20 and older; the percent of births to unmarried women increased from 10.7% in 1980, to 19.6% in 1990, and to 21.3% in 1994.

## **Paternity Acknowledgement**

- The percentages of fathers who acknowledged paternity for infants born to unmarried mothers of all ages has risen steadily since 1989 to a high of 53.4% in 1994. Among unmarried teen mothers, the paternity acknowledgement percentage increased from 45.9% in 1989 to 50.3% in 1994.
- While the paternity acknowledgement percentage is consistently the lowest for infants of 12-17 year-old unmarried teen mothers, it grew from 43.5% in 1993 to 47.9% in 1994, representing the largest one-year increase for any age group of unmarried mothers.

## **Father's Age**

- Among all unmarried teen births with acknowledged paternity, 56.5% of the fathers were age 20 and over. Among infants with 16-17 year old teen mothers, 41.5% of the fathers were at least 20 years old, while among infants with 12-15 year old teen mothers, 22.7% of the fathers were at least 20 years old.

## ***II. Birthweight, Gestational Age, and Prenatal Care***

### **Low Birthweight and Gestational Age**

- The overall percentage of low birthweight (LBW) births to teen mothers increased slightly, from 8.1% to 9.1% between 1992 and 1994. Among teen births to black non-Hispanic women, the LBW percentage increased from 11.2% in 1992 to 13.1% in 1994, while the percentages for the white non-Hispanic and Hispanic groups showed little change.
- As in previous years, the low birthweight (LBW) percentage among teen births was higher than the LBW percentage among women age 20 and over, regardless of race/Hispanic ethnicity. In 1994, 10.2% of infants born to women under age 18 were LBW and 8.5% of infants born to 18-19 year olds were LBW, while 6.1% born to women age 20 and over were LBW.
- The percentage of LBW infants varied by race/Hispanic ethnicity both among teen births and among births to women age 20 and over; the percentage of LBW infants among black non-Hispanic teen births (13.1%) was almost twice as high as among white non-Hispanic



teen births (7.5%). The LBW percentages among Hispanic and Asian teen births (9.8% and 10.1%) also were higher than among white non-Hispanic teen births. The same pattern was found among women age 20 and over.

- The percentage of premature births (< 37 completed weeks gestation) to teens (9.9%) was slightly larger than the percentage of premature births to women age 20 and over (7.6%). Prematurity among teen births was more common among infants of black non-Hispanic, Hispanic, and Asian teens (13.2%, 10.6%, 10.6%, respectively) than among infants of white non-Hispanic teens (8.4%).

### **Prenatal Care**

- Between 1989 and 1994, the percentage of births to women under age 20 receiving adequate prenatal care<sup>2</sup> increased for all race/Hispanic ethnicity groups. The overall percentage of teen mothers receiving adequate prenatal care increased from 54.8% in 1989 to 67.8% in 1994.
- While 85.7% of infants born to mothers 20 years old and over in 1994 received adequate prenatal care, 67.8% of teen births had adequate care. Adequate prenatal care was lowest among Asian teen mothers (52.7%), followed by black non-Hispanic (60.1%), Hispanic (68%), and white non-Hispanic teen mothers (71.3%).
- While 90.4% of mothers 20 years old and over giving birth in 1994 received prenatal care starting in the first trimester, only 72.7% of teen mothers started in the first trimester.

### **Cesarean Sections**

- In 1994, cesarean sections occurred less frequently among teen births (12.3%) than among births to women age 20 and over (21.4%).

### **Breastfeeding**

- The percentage of teen mothers indicating either that they were breastfeeding their infant during their hospital stay or that they intended to breastfeed increased from 28.5% in 1989 to 44.7% in 1994.
- Overall, the percentage of teen mothers (44.7%) who were breastfeeding or intended to breastfeed was lower than the percentage among mothers age 20 and over (66.4%).

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<sup>2</sup>Adequacy of Prenatal Care is determined from an index that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. See Glossary for further explanation.

### ***III. Birth Characteristics for Selected Communities***

State-wide data can mask variation among individual communities. In this section, statistics are given for the 25 Massachusetts communities with the greatest number of births among teens in 1994.

#### **Community Birth Rates**

- The five Massachusetts communities with the highest teen birth rates in 1994 were Holyoke (135.7 births per 1,000 Holyoke women ages 15-19 years), Lawrence (129.1), Chelsea (111.6), Springfield (96.6), and Southbridge (87.0). In 1994, nearly one out of every five (19.4%) infants born among teen women in Massachusetts occurred in these five communities. Twenty-two out of the 25 communities with the greatest number of teen births in 1994 were also among the top 25 in 1993.
- These five communities - Holyoke, Lawrence, Chelsea, Springfield, and Southbridge - had the highest teen birth rates in 1993 as well.

#### **Race/Hispanic Ethnicity Distribution of Births**

- In the five communities with the highest birth rates, the majority of teen births in 1994 were to Hispanic mothers. The percentage of younger teen mothers (< 18 years) who were Hispanic was 83.3% in Holyoke, 82.7% in Lawrence, 71.4% in Chelsea, 55.5% in Springfield, and 52.0% in Southbridge. Statewide, the majority of teen births were to white non-Hispanic mothers (50.3%), followed by Hispanic (29.7%), black non-Hispanic (15.2%) and Asian (2.9%) mothers.

#### **Low Birthweight (LBW)**

- Among the 25 communities with the greatest number of 1994 teen births, the five communities with the highest percentages of LBW among teen births were Revere (14.3%), Lowell (12.4%), Boston (12.3%), Worcester (12.2%), and Fitchburg (11.9%).

#### **Adequacy of Prenatal Care**

- The five communities with the lowest percentages of teen births with adequate care were Cambridge (49%), Brockton (50.7%), Holyoke (52%), Springfield (54.3%), and Chelsea (59.2%).
- Cambridge (23.5%), Barnstable (13.6%), Chelsea (12.2%), Brockton (12.1%), and Holyoke (10.3%) had the highest percentages of teen births with inadequate or no prenatal care. However, the actual community-specific numbers of teen births with inadequate or no prenatal care are small, causing wide fluctuations in percentages from year to year.



### **Previous Live Births (Parity)**

- The percentage of births among teens who had at least one previous live birth was highest in Holyoke (40.0%), Revere (30.6%), Lawrence (30.2%), Springfield (30.1%), and Chelsea (27.3%). The state-wide percentage of births to teen mothers who had at least one previous live birth was 20.3%.

### **Expected Educational Attainment**

- The percentage of teen births in 1994 among mothers who were one or more school grades behind the expected grade for their age was highest in Holyoke (52.7%), Revere (38.8%), Springfield (37.9%), Chicopee (36.6%), and Leominster (35.8%). State-wide, 26.7% of teen births were to mothers who were one or more grades behind.

### **IV. *Birth Characteristics for all 351 Communities and the 27 Community Health Network Areas (CHNA)***

In this section, the following statistics are presented for each of the 351 city/towns in Massachusetts and for each of the 27 CHNAs: the number of all births, the number of teen births by mother's age (< 18 years and < 20 years), the number of births among teen mothers (< 20 years) who started prenatal care in the first trimester, and the number whose prenatal care was paid for with public funds. The Community Health Network Areas are aggregations of all Massachusetts cities and towns into 27 groups for the purpose of tracking health status and implementing health improvement efforts (see Appendix for CHNA city/town groupings).

- In 1994, the Springfield CHNA had the highest percentage of teen births (15.6%) (double the state-wide percentage of 7.8%), followed by the Lawrence CHNA (15.1%) and the New Bedford CHNA (14.5%).
- The Springfield CHNA also had the lowest percentage in 1994 of teen births with prenatal care starting in the first trimester (62.1%). The Brockton CHNA had the next lowest percentage (62.7%).

*I.*

*Demographic  
and Birth  
Characteristics*

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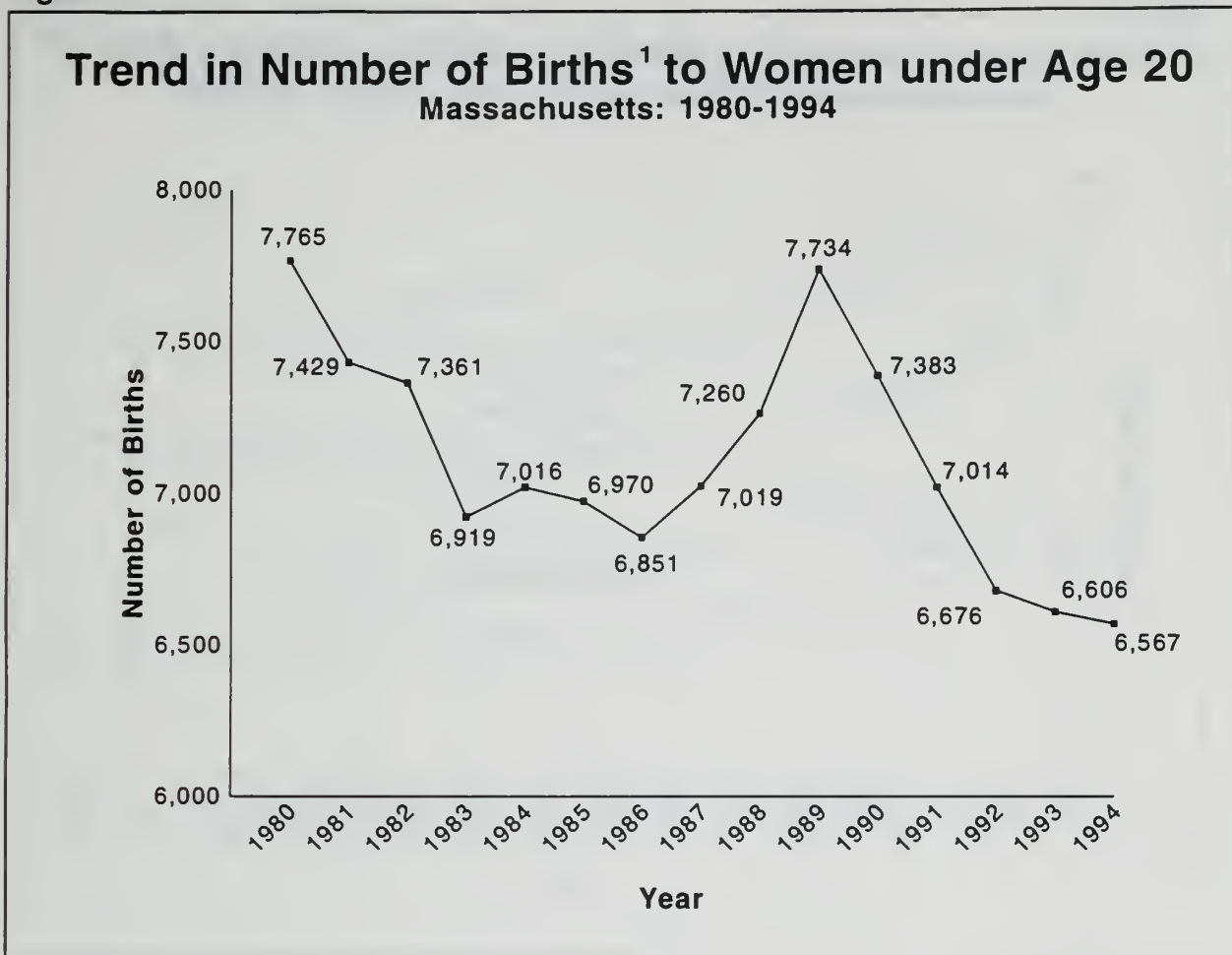
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Figure 1.

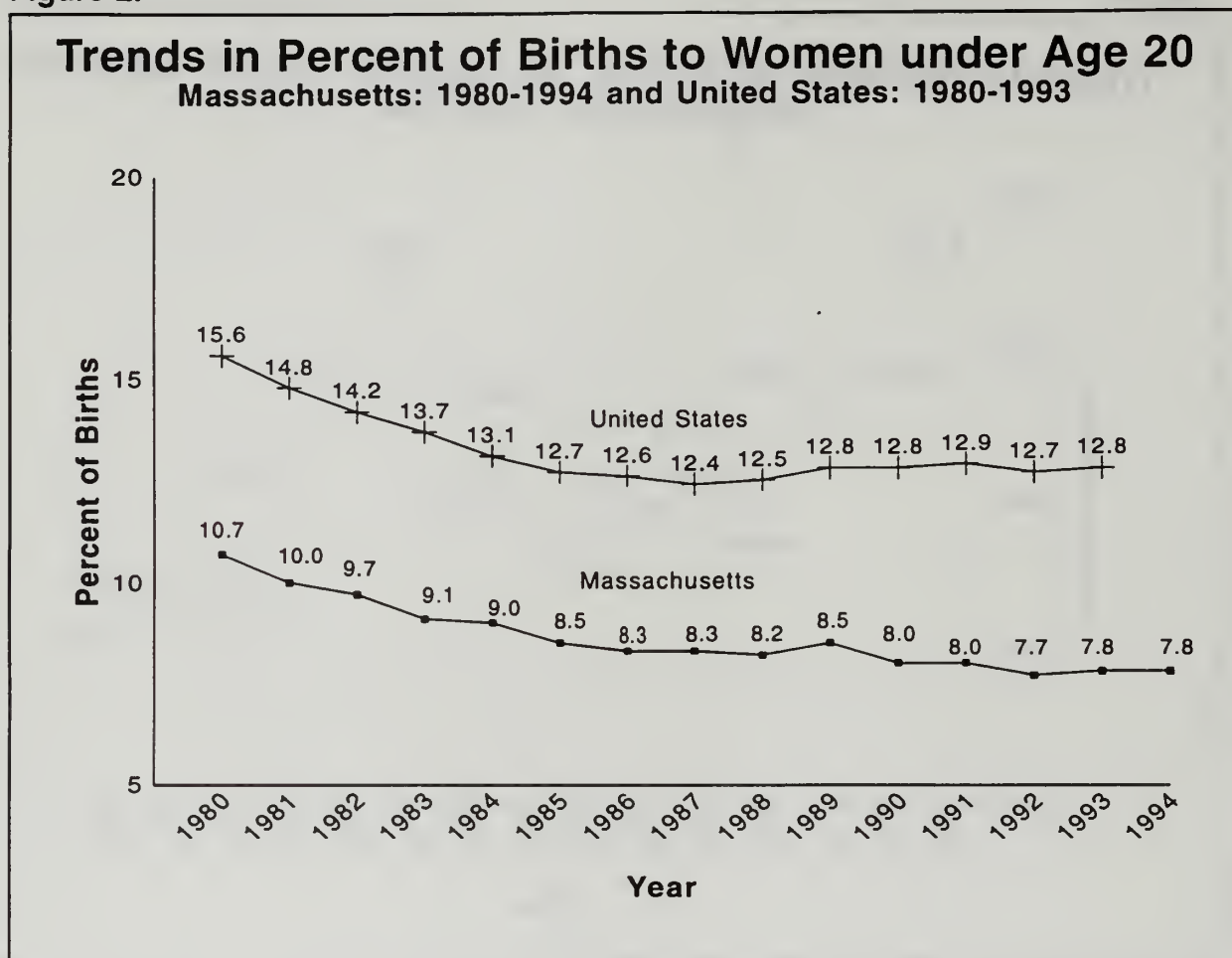


Source: Registry of Vital Records and Statistics, MDPH, 1980-1994.

<sup>1</sup> Births are resident live births.

- In 1994, 6,567 infants were born to women under age 20, a decline of 39 births since 1993.
- Since 1980, the number of births to teens has declined by 15.4%.
- Since 1990, the number of births to teens has declined by 11.1%, whereas the number of all births in Massachusetts has declined by 9.4% (data not shown).

Figure 2.

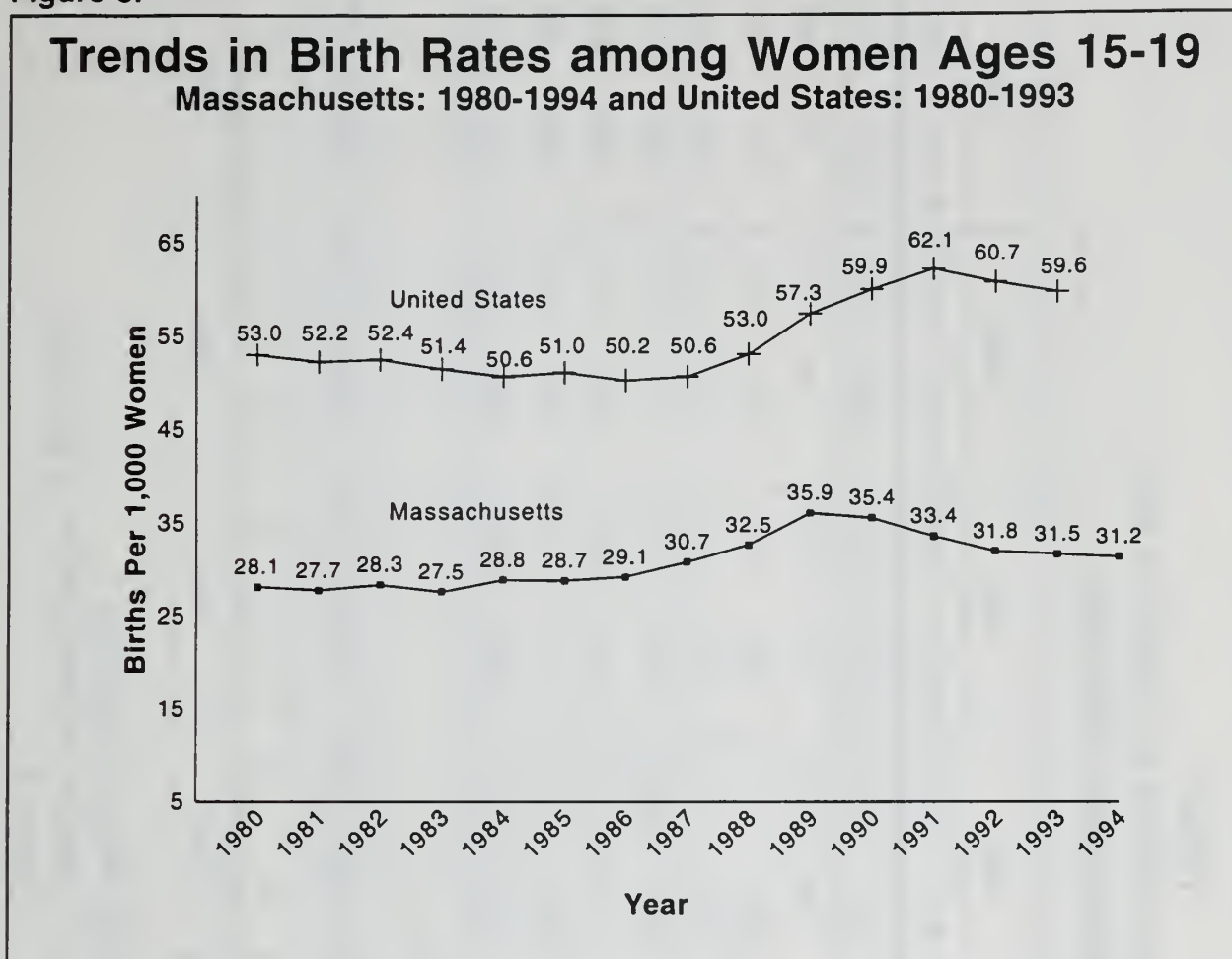


Sources: Registry of Vital Records and Statistics, MDPH, 1980-1994; National Center for Health Statistics, 1980-1993.

- In 1994, 7.8% of births in Massachusetts were to women under age 20. This percentage was unchanged from that of 1993.
- The percent of births to women under age 20 showed a slow, but steady, decline between 1980 and 1992, with the annual figures leveling off between 1992 and 1994.
- The 1994 Massachusetts percentage of births to women under age 20 (7.8%) remained well below the 1993 national percentage (12.8%) (1994 national data unavailable).



Figure 3.



Sources: Registry of Vital Records and Statistics, MDPH, 1980-1993; National Center for Health and Statistics, 1980-1992

- The 1994 Massachusetts teen birth rate of 31.2 (births per 1,000 women ages 15-19) was similar to the previous year's rate, 31.5.
- The Massachusetts teen birth rate has declined steadily since 1989, although the 1994 rate remains higher than the rate in 1980 (28.1). Nationally, the teen birth rate shows a steady decline since 1991.
- The 1994 Massachusetts teen birth rate was just over half the 1993 national teen birth rate (1994 national data unavailable).

**Table 1.**  
**Trends in Teen Births by Mother's Age**  
**Massachusetts: 1989-1994**

Mother's Age	1989		1990		1991		1992		1993		1994	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>12-19</b>	7,734	100.0	7,382	100.0	7,014	100.0	6,676	100.0	6,606	100.0	6,567	100.0
<b>12-13</b>	19	0.2	21	0.3	20	0.3	18	0.3	16	0.2	24	0.4
<b>14</b>	108	1.4	103	1.4	102	1.5	103	1.5	121	1.8	131	2.0
<b>15</b>	345	4.5	351	4.8	372	5.3	341	5.1	360	5.4	371	5.6
<b>16</b>	853	11.0	810	11.0	758	10.8	782	11.7	741	11.2	822	12.5
<b>17</b>	1,426	18.4	1,344	18.2	1,391	19.8	1,327	19.9	1,259	19.1	1,244	18.9
<b>18</b>	2,207	28.5	2,014	27.3	1,910	27.2	1,753	26.3	1,872	28.3	1,758	26.8
<b>19</b>	2,776	35.9	2,739	37.1	2,461	35.1	2,352	35.2	2,237	33.9	2,217	33.8

Source: Registry of Vital Records and Statistics, MDPH: 1989-1994.

- In 1994, 60.5% of all teen births were to females ages 18-19 years, 37.1% were to females ages 15-17 years, and 2.4% were to females who were less than 15 years old.
- The distribution of teen births by mother's age has changed slightly since 1989. The proportion of births to women under age 18 has increased from 35.6% in 1989 to 39.5% in 1994.
- In 1994, there were 24 births to women 12 or 13 years old.

**Table 2.**  
**Trends in Teen Births<sup>1</sup> by Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 1989-1994**

Mother's Race/ Ethnicity	1989		1990		1991		1992		1993		1994	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>Total</b>	7,734	100.0	7,382	100.0	7,014	100.0	6,676	100.0	6,606	100.0	6,567	100.0
<b>White*</b>	4,614	59.7	4,200	56.9	3,836	54.7	3,547	53.1	3,450	52.2	3,303	50.3
<b>Black*</b>	1,141	14.8	1,121	15.2	1,059	15.1	1,058	15.8	1,003	15.2	997	15.2
<b>Hispanic</b>	1,592	20.6	1,714	23.2	1,769	25.2	1,737	26.0	1,809	27.4	1,950	29.7
<b>Asian*</b>	241	3.1	233	3.2	194	2.8	178	2.7	180	2.7	188	2.9
<b>Other*</b>	132	1.7	105	1.4	145	2.1	147	2.2	156	2.4	126	1.9
<b>Unknown</b>	14	0.2	9	0.1	11	0.2	9	0.1	8	0.1	3	**

Source: Registry of Vital Records and Statistics, MDPH: 1989-1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Births to women ages 12-19.

■ Since 1989, the proportion of infants of teen mothers born to white non-Hispanic women (ages 12-19 years) decreased from 59.7% to 50.3%. The proportion of infants born to Asian teen mothers showed a slight decline from 3.1% in 1989 to 2.9% in 1994.

■ The proportion of infants born to Hispanic teen mothers increased from 20.6% in 1989 to 29.7% in 1994. The proportion of births to black non-Hispanic teen mothers showed a smaller increase, from 14.8% in 1989 to 15.2% in 1994.

**Table 3.**  
**Teen Births by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1994**

Age	Total		White*		Black*		Hispanic		Asian*		Other*		Unknown	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
< 20	6,567	100.0	3,303	100.0	997	100.0	1,950	100.0	188	100.0	126	100.0	3	100.0
18-19	3,975	60.5	2,192	66.4	574	57.6	1,027	52.7	102	54.3	79	62.7	1	**
16-17	2,066	31.5	933	28.3	319	32.0	710	36.4	66	35.1	37	29.4	1	**
12-15	526	8.0	178	5.4	104	10.4	213	10.9	20	10.6	10	7.9	1	**

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Percents are based on column totals.

- The distribution of teen births by mother's age varied across race/Hispanic ethnicity groups. A lower proportion of white non-Hispanic teen births were to mothers under age 18 (33.6%) than Hispanic, Asian or black teen births (47.3%, 45.7%, 42.4%, respectively).
- The percentage of white non-Hispanic teen births that were to mothers under age 16 (5.4%) was half the proportion in other race/non-Hispanic ethnicity groups of births to mothers under age 16.



**Table 4.**  
**Births by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1994**

Mother's Race/Ethnicity	Under 18 Years		18 to 19 Years		Under 20 Years		20 Years & Over		All Ages	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>Total Births</b>	2,592	100.0	3,975	100.0	6,567	100.0	77,191	100.0	83,758	100.0
<b>White*</b>	1,111	42.9	2,192	55.1	3,303	50.3	61,273	79.4	64,576	77.1
<b>Black*</b>	423	16.3	574	14.4	997	15.2	5,261	6.8	6,258	7.5
<b>African-American</b>	338	13.0	418	10.5	756	11.5	2,912	3.8	3,668	4.4
<b>West Indian</b>	20	0.8	34	0.9	54	0.8	527	0.7	581	0.7
<b>Haitian</b>	23	0.9	34	0.9	57	0.9	842	1.1	899	1.1
<b>Other Black</b>	42	1.6	88	2.2	130	2.0	980	1.3	1,110	1.3
<b>Hispanic</b>	923	35.6	1,027	25.8	1,950	29.7	6,479	8.4	8,429	10.1
<b>Puerto Rican</b>	725	28.0	741	18.6	1,466	22.3	3,094	4.0	4,560	5.4
<b>Dominican</b>	87	3.4	114	2.9	201	3.1	1,186	1.5	1,387	1.7
<b>Central Amer.</b>	31	1.2	71	1.8	102	1.6	860	1.1	962	1.1
<b>Other Hispanic</b>	80	3.1	101	2.5	181	2.8	1,339	1.7	1,520	1.8
<b>Asian*</b>	86	3.3	102	2.6	188	2.9	3,194	4.1	3,382	4.0
<b>Vietnamese</b>	27	1.0	31	0.8	58	0.9	587	0.8	645	0.8
<b>Cambodian</b>	35	1.4	29	0.7	64	1.0	432	0.6	496	0.6
<b>Other SE Asian</b>	11	0.4	16	0.4	27	0.4	130	0.2	157	0.2
<b>Chinese</b>	5	0.2	5	0.1	10	0.2	1,020	1.3	1,030	1.2
<b>Other Asian</b>	8	0.3	21	0.5	29	0.4	1,025	1.3	1,054	1.3
<b>Other*</b>	47	1.8	79	2.0	126	1.9	823	1.1	949	1.1
<b>Unknown</b>	2	**	1	**	3	**	161	0.2	164	0.2

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Percentages are based on column totals.



- In 1994, the race/Hispanic ethnicity distribution of births varied across age groups. While 8.4% and 6.8% of births to mothers age 20 and over were to Hispanic and black non-Hispanic mothers, respectively, 29.7% of teen births (age 12-19 years) were to Hispanic mothers and 15.2% were to black non-Hispanic mothers.
- Among teen births to mothers under age 18, 35.6% were to Hispanic mothers and 16.3% were to black non-Hispanic mothers.
- The percentage of births to Asian mothers varied little across age groups; 4.1% of births to women age 20 and over were to Asian mothers and 2.9% of teen births (age <20 years) were to Asian mothers.
- White non-Hispanic births made up 79.4% of births to women age 20 and over, while they represented 55.1% of births to mothers ages 18-19 and 42.9% of births to women under age 18.
- The largest maternal, ethnic minority group among teen births was Puerto Rican (28.0%).

**Table 5.**  
**Births by Mother's Place of Birth and Age**  
**Massachusetts: 1994**

Mother's Age	United States <sup>1</sup>		Puerto Rico		Other <sup>2</sup>		Unknown		Total	
	N	%	N	%	N	%	N	%	N	%
<b>All Ages</b>	67,953	81.1	2,620	3.1	12,812	15.3	373	0.4	83,758	100.0
<b>20 +</b>	62,822	81.4	1,936	2.5	12,078	15.6	355	0.5	77,191	100.0
<b>&lt; 20</b>	5,131	78.1	684	10.4	734	11.2	18	0.3	6,567	100.0
<b>18-19</b>	3,125	78.6	352	8.9	485	12.2	13	0.3	3,975	100.0
<b>12-17</b>	2,006	77.4	332	12.8	249	9.6	5	0.2	2,592	100.0

Source: Registry of Vital Records and Statistics, MDPH, 1994.

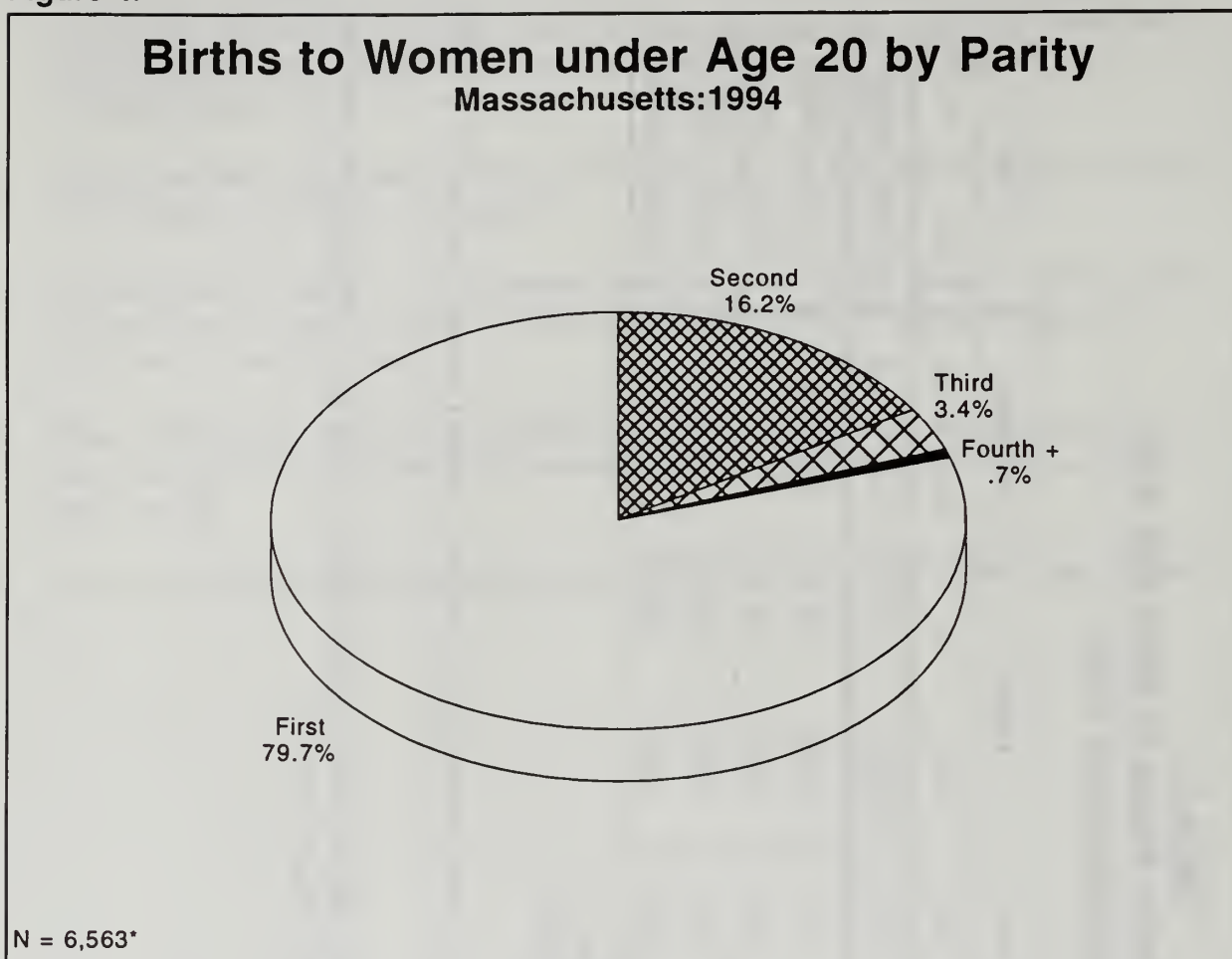
<sup>1</sup> United States includes the 50 states and the District of Columbia.

<sup>2</sup> Rest of world.

■ In 1994, 78.1% of teen births and 81.4% of births to older women (age 20 and over) were to mothers who were born in the United States.

■ Slightly more than 10% of all births to women under age 20 were to women born in Puerto Rico. Among births to women ages 12-17, 12.8% were to mothers who were born in Puerto Rico.

Figure 4.



Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Percentages are based on births with known parity.

- In 1994, 20.3% (1,333) of teen births were to multiparous mothers (mothers who had at least one previous live birth); 4.1% (269) of teen births were to mothers who had two or more previous live births. There has been very little change in this distribution since 1989 (1989 data not shown).

Note: Parity is defined as number of live births including this birth. The vast majority of second live births were singletons (96.6%); 3.4% of second live births were actually due to twin or other simultaneous births.

**Table 6.**  
**Births to Multiparous<sup>1</sup> Mothers by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1994**

Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>All Ages</b>	36,634	56.7	3,926	62.7	5,188	61.6	1,835	54.3	543	57.2	43	26.2	48,169	57.6
<b>20 +</b>	36,182	59.1	3,707	70.5	4,595	70.9	1,791	56.1	518	62.9	43	26.7	46,836	60.7
<b>&lt; 20</b>	452	13.7	219	22.0	593	30.4	44	23.4	25	19.8	0	0.0	1,333	20.3
<b>18-19</b>	395	18.0	172	30.0	428	41.7	27	26.5	22	27.9	0	0.0	1,044	26.3
<b>12-17</b>	57	5.1	47	11.1	165	17.9	17	19.8	3	**	0	0.0	289	11.2

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Multiparous is having had at least one previous live birth.

- More than one in four births among women ages 18-19 were to multiparous mothers (women who had at least one previous live birth), whereas 11.2% of births among women ages 12-17 were to multiparous mothers.
- Among births to teens, births to Hispanic and black non-Hispanic women ages 18-19 years had the highest percentages of mothers who had at least one previous live birth (41.7% and 30.0%, respectively).



**Table 7.**  
**Births by Mother's Race/Hispanic Ethnicity, Age,**  
**and Prenatal Care Payment Source**  
**Massachusetts: 1994**

Mother's Race/Ethnicity	Under 18 Years		18 to 19 Years		Under 20 Years		20 Years & Over		All Ages	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>Total Births<sup>2</sup></b>	2,592	100.0	3,975	100.0	6,567	100.0	77,191	100.0	83,758	100.0
Public <sup>3</sup>	1,847	71.3	3,006	75.6	4,853	73.9	18,071	23.4	22,924	27.4
Private <sup>4</sup>	598	23.1	753	18.9	1,351	20.6	55,139	71.4	56,490	67.4
<b>White*</b>	1,111	100.0	2,192	100.0	3,303	100.0	61,273	100.0	64,576	100.0
Public	644	58.0	1,508	68.8	2,152	65.2	9,635	15.7	11,787	18.3
Private	398	35.8	568	25.9	966	29.2	48,649	79.4	49,615	76.8
<b>Black*</b>	423	100.0	574	100.0	997	100.0	5,261	100.0	6,258	100.0
Public	322	76.1	442	77.0	764	76.6	2,698	51.3	3,462	55.3
Private	82	19.4	97	16.9	179	18.0	2,222	42.2	2,401	38.4
<b>Hispanic</b>	923	100.0	1,027	100.0	1,950	100.0	6,479	100.0	8,429	100.0
Public	774	83.9	907	88.3	1,681	86.2	4,324	66.7	6,005	71.2
Private	97	10.5	64	6.2	161	8.3	1,809	27.9	1,970	23.4
<b>Asian*</b>	86	100.0	102	100.0	188	100.0	3,194	100.0	3,382	100.0
Public	73	84.9	79	77.5	152	80.9	1,044	32.7	1,196	35.4
Private	9	10.5	16	15.7	25	13.3	1,976	61.9	2,001	59.2
<b>Other*</b>	47	100.0	79	100.0	126	100.0	823	100.0	949	100.0
Public	34	72.3	69	87.3	103	81.7	359	43.6	462	48.7
Private	12	25.5	8	10.1	20	15.9	405	49.2	425	44.8

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

<sup>1</sup> Percentages are based on race/Hispanic ethnicity totals. Percentages for Public and Private do not add up to 100 because total includes Workers Compensation, self pay, and free care.

<sup>2</sup> Records with unknown mother's race/Hispanic ethnicity are included in Total Births.

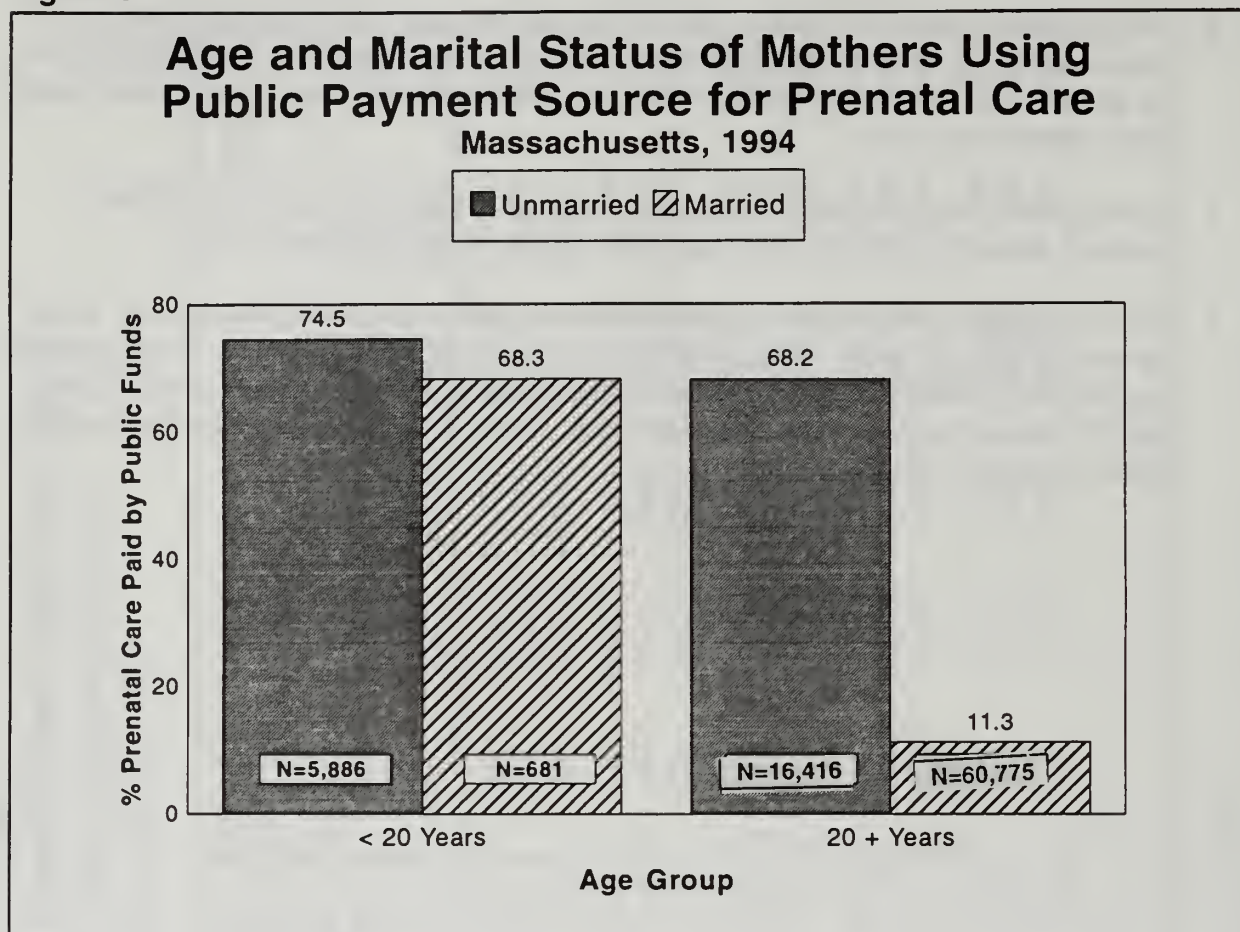
<sup>3</sup> Public: Medicaid, Medicare, Healthy Start and other government programs.

<sup>4</sup> Private: Blue Cross/Blue Shield, other commercial insurance, HMO. HMO may include Medicaid recipients in managed care programs.



- Teen mothers continue to receive publicly-funded prenatal care at much higher levels than mothers age 20 and over, regardless of race/Hispanic ethnicity. In contrast, 23.4% of mothers age 20 and over received publicly-funded prenatal care, a figure that showed little change since 1993.
- Among teen births, a slightly higher percentage of mothers ages 18 or 19 (75.6%) received publicly-funded prenatal care than mothers under 18 years (71.3%).
- The percentage of teen births to mothers receiving publicly-funded prenatal care varied by race/Hispanic ethnicity group: 65.2% of white non-Hispanic mothers, 76.6% of black non-Hispanic mothers, 80.9% of Asian mothers, and 86.2% of Hispanic mothers under age 20 received publicly-funded prenatal care. These figures have remained relatively stable since 1993 (data not shown).

Figure 5.



Source: Registry of Vital Records and Statistics, MDPH, 1994.

- In 1994, 74.5% of *unmarried* teen mothers and 68.3% of *married* teen mothers received publicly-funded prenatal care.
- There was a smaller difference between unmarried and married women in percentages of publicly funded prenatal care among teen mothers than there was among mothers age 20 and over. In 1994, 74.5% of unmarried teen mothers and 68.3% of married teen mothers received publicly-funded prenatal care. In contrast, 68.2% of unmarried women age 20 and older received publicly-funded care, while only 11.3% of married women age 20 and older did.

**Table 8.**  
**Trends in Births to Unmarried Mothers by Age of Mother**  
**Massachusetts: 1989-1994**

Mother's Age	1989		1990		1991		1992		1993		1994	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>All Ages</b>	21,756	23.8	22,836	24.7	22,852	25.9	22,612	25.9	22,345	26.4	22,302	26.6
<b>20 +</b>	15,543	18.6	16,687	19.6	16,843	20.8	16,750	20.8	16,462	21.1	16,416	21.3
<b>&lt; 20</b>	6,213	80.3	6,149	83.3	6,009	85.7	5,862	87.8	5,883	89.1	5,886	89.6
<b>18-19</b>	3,707	74.4	3,715	78.2	3,561	81.5	3,462	84.3	3,515	85.5	3,433	86.4
<b>12-17</b>	2,506	91.1	2,433	92.5	2,448	92.6	2,400	93.4	2,368	94.8	2,453	94.6

Source: Registry of Vital Records and Statistics, MDPH, 1994.

<sup>1</sup> Percentages are based on total number of births within each category.

- The percent of all births that were to unmarried women has increased steadily over time, reaching an all-time high of 26.6% in 1994.
- This trend holds for both adult women and teens; 89.6% of teen mothers and 21.3% of adult mothers delivering in 1994 were unmarried. The greatest increase in percentage of births to unmarried mothers was found among women ages 18 to 19.
- In 1994, 94.6% of younger teen mothers (ages 12-17 years) were unmarried.

**Table 9.**  
**Births to Unmarried Mothers by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1994**

Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>All Ages</b>	11,897	18.4	3,989	63.7	5,191	61.6	757	22.4	436	45.9	32	19.5	22,302	26.6
20+	8,962	14.6	3,026	57.5	3,480	53.7	597	18.7	322	39.1	29	18.0	16,416	21.3
< 20	2,935	88.9	963	96.6	1,711	87.7	160	85.1	114	90.5	3	**	5,886	89.6
18-19	1,881	85.8	547	95.3	855	83.3	79	77.5	70	88.6	1	**	3,433	86.4
12-17	1,054	94.9	416	98.4	856	92.7	81	94.2	44	93.6	2	**	2,453	94.6

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

- There was marked variation by race/Hispanic ethnicity in the percent of unmarried mothers in 1994. Among births to women of all ages, 18.4% of white non-Hispanic women, 63.7% of black non-Hispanic women, and 61.6% of Hispanic women were unmarried.
- This variation was less pronounced among teens; 88.9% of white non-Hispanic teen mothers, 96.6% of black non-Hispanic teen mothers, and 87.7% of Hispanic teen mothers were unmarried.



**Table 10.**  
**Trends in Paternity Acknowledgement<sup>1</sup> by Age of Unmarried Mother**  
**Massachusetts: 1989-1994**

Mother's Age	1989		1990		1991		1992		1993		1994	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>All Ages</b>	10,084	46.4	10,697	46.8	10,708	46.9	10,874	48.1	11,329	50.7	11,904	53.4
<b>20+</b>	7,231	46.5	7,898	47.3	7,992	47.5	8,192	48.9	8,487	51.6	8,944	54.5
<b>&lt; 20</b>	2,853	45.9	2,799	45.5	2,716	45.2	2,682	45.6	2,842	48.3	2,960	50.3
<b>18-19</b>	1,752	47.3	1,764	47.5	1,664	46.7	1,631	47.1	1,812	51.6	1,785	52.0
<b>12-17</b>	1,101	43.9	1,035	42.5	1,052	43.0	1,051	43.8	1,030	43.5	1,175	47.9

Source: Registry of Vital Records and Statistics, MDPH, 1994.

<sup>1</sup> Paternity acknowledgement: voluntary self-acknowledgement by fathers or acknowledgement through legal action (see Glossary for further explanation).

- The percentage of fathers acknowledging paternity has risen every year since 1989 to a high of 53.4% among unmarried women of all ages.
- The percentage of fathers acknowledging paternity has increased at a slower pace among unmarried teens (from 45.9% in 1989 to 50.3% in 1994) than among unmarried adults (from 46.5% in 1989 to 54.5% in 1994).
- While paternity acknowledgement was lowest among the fathers of infants born to young (12-17) unmarried teen women, this percentage showed a greater increase from 1993 to 1994 than occurred among older teens, increasing from 43.5% to 47.9%.



**Table 11.**  
**Paternity Acknowledgement<sup>1</sup> by Unmarried Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1994**

Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>All Ages</b>	7,841	65.9	1,195	30.0	2,456	47.3	177	23.4	215	49.3	20	62.5	11,904	53.4
<b>20+</b>	6,022	67.2	966	31.9	1,662	47.8	129	21.6	147	45.7	18	62.1	8,944	54.5
<b>&lt; 20</b>	1,819	62.0	229	23.8	794	46.4	48	30.0	68	59.7	2	**	2,960	50.3
<b>18-19</b>	1,178	62.6	130	23.7	413	48.3	25	31.7	38	54.3	1	**	1,785	52.0
<b>12-17</b>	641	60.8	99	23.8	381	44.5	23	28.4	30	68.2	1	**	1,175	47.9

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Paternity acknowledgement: voluntary self-acknowledgement by fathers or acknowledgement through legal action (see Glossary for further explanation).

<sup>2</sup> Percentages are based on the total number of births to unmarried mothers within each category.

- Paternity acknowledgement varied widely by race/Hispanic ethnicity, from a high of 65.9% acknowledgement for births to white non-Hispanic mothers of all ages to a low of 23.4% acknowledgement for births to Asian mothers of all ages.
- The race/Hispanic ethnicity distribution of paternity acknowledgement also varied across age groups. For births to adult women, paternity was acknowledged for 67.2% of births to white non-Hispanic unmarried women in contrast to 21.8% of births to Asian unmarried women. For births to women under age 20, paternity was acknowledged for 62.0% of births to white non-Hispanic unmarried teens, in contrast to 23.8% of births to black non-Hispanic unmarried teens.

**Table 12.**  
**Father's Age by Unmarried Mother's Age When Father Acknowledged Paternity**  
**Massachusetts: 1994**

Mother's Age	Father's Age													
	12-17		18-19		20-24		25-29		30-34		35 and Over		Unknown	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
20 +	33	0.4	246	2.8	2,635	29.5	2,740	30.6	1,787	20.0	1,494	16.7	9	0.1
< 20	397	13.4	889	30.0	1,343	45.4	246	8.3	63	2.1	21	0.7	1	**
< 18	284	24.2	439	37.4	379	32.3	58	4.9	11	0.9	4	**	0	0.0
18-19	113	6.3	450	25.2	964	54.0	188	10.5	52	2.9	17	1.0	1	**
16-17	197	20.3	370	38.2	333	34.4	54	5.6	11	1.1	4	**	0	0.0
12-15	87	42.2	69	33.5	46	22.3	4	**	0	0.0	0	0.0	0	0.0

**Source:** Registry of Vital Records and Statistics, MDPH, 1994.

**\*\* Calculations based on fewer than five events are excluded.**

<sup>1</sup> Percentages are based on the total number of fathers whose ages were identified by unmarried mothers within each category.

- Among unmarried mothers, the extent to which the father's and mother's ages are closely comparable varies by maternal age. For unmarried women age 20 and over, approximately 3% of the named fathers were under 20 years old; for unmarried teens, 56.5% of the named fathers were age 20 and over.
- Among 16-17 year old teen mothers, 41.5% of the fathers named were age 20 and over; among 12-15 year old teen mothers, 22.7% of the fathers were age 20 and over.

Date		Description		Amount	
1890	Jan 1	Balance		100.00	
	Feb 1	Interest		5.00	
	Mar 1	Interest		5.00	
	Apr 1	Interest		5.00	
	May 1	Interest		5.00	
	Jun 1	Interest		5.00	
	Jul 1	Interest		5.00	
	Aug 1	Interest		5.00	
	Sep 1	Interest		5.00	
	Oct 1	Interest		5.00	
	Nov 1	Interest		5.00	
	Dec 1	Interest		5.00	
1891	Jan 1	Balance		100.00	
	Feb 1	Interest		5.00	
	Mar 1	Interest		5.00	
	Apr 1	Interest		5.00	
	May 1	Interest		5.00	
	Jun 1	Interest		5.00	
	Jul 1	Interest		5.00	
	Aug 1	Interest		5.00	
	Sep 1	Interest		5.00	
	Oct 1	Interest		5.00	
	Nov 1	Interest		5.00	
	Dec 1	Interest		5.00	

Received of the Treasurer of the County of ...  
 the sum of ... Dollars ...  
 for ...  
 This receipt is valid for ...  
 Dated this ... day of ... 189...  
 By ...  
 County Clerk

II.

*Birthweight,  
Gestational Age,  
and Prenatal Care*

10

11

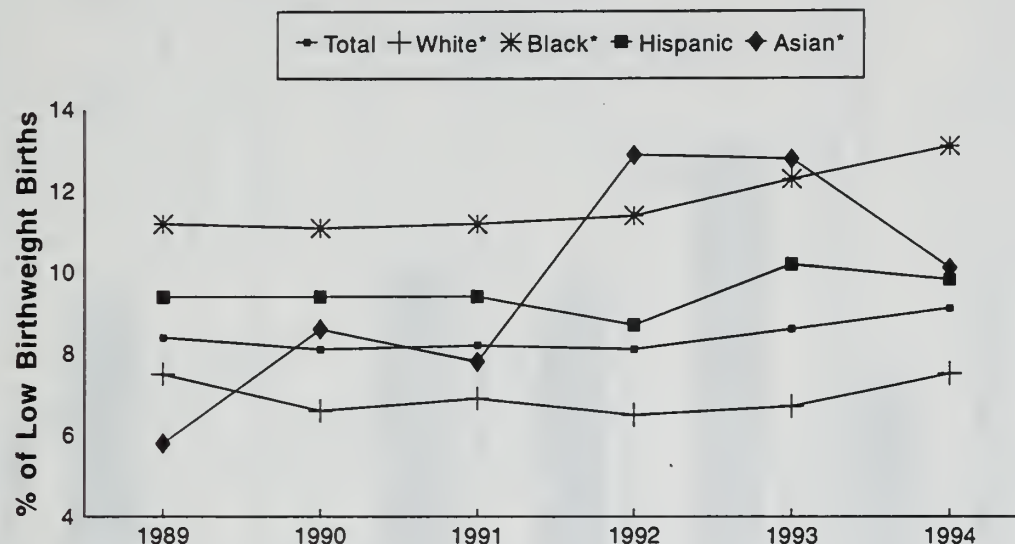
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13



Figure 6.

## Trends in Percent of Low Birthweight<sup>1</sup> Births to Women under Age 20 Massachusetts: 1989-1994



Total	8.4	8.1	8.2	8.1	8.6	9.1
White*	7.5	6.6	6.9	6.5	6.7	7.5
Black*	11.2	11.1	11.2	11.4	12.3	13.1
Hispanic	9.4	9.4	9.4	8.7	10.2	9.8
Asian*	5.8	8.6	7.8	12.9	12.8	10.1

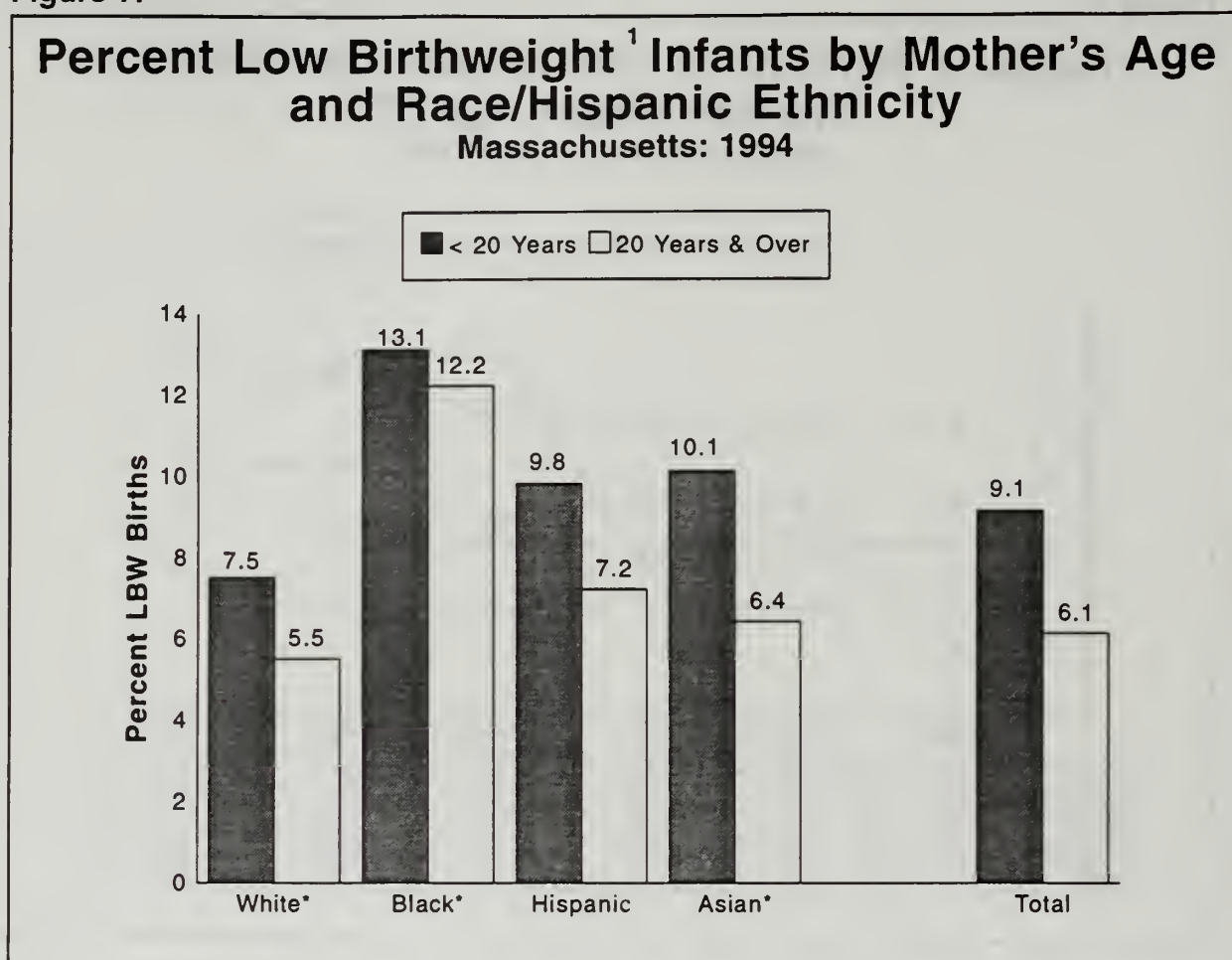
Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

- The overall percentage of low birthweight (LBW) infants born to teen mothers (age < 20 years) showed little change between 1989 and 1992, remaining at about 8%. Between 1992 and 1994, the percentage increased slightly, from 8.1% to 9.1%.
- The percentage of LBW births among black teen mothers (age < 20 years) increased from 11.2% in 1989 to 13.1% in 1994, while the percentages for white non-Hispanic and Hispanic teen mothers changed little (7.5% and 9.4% in 1989 to 7.5% and 9.8% in 1994, respectively).
- *Because the numbers of LBW births were small among Asian teen mothers (see Table 13), their LBW percentages fluctuated widely from year to year. For example, the decrease in their percentage of LBW births from 12.8% in 1993 to 10.3% in 1994 was due to a reduction of only four LBW births (23 in 1993 and 19 in 1994).*

Figure 7.



Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds

- As in previous years, the percentage of low birthweight (LBW) births among teens (age < 20 years) in 1994 was higher than the LBW percentage among older mothers (9.1% versus 6.1%), regardless of race/Hispanic ethnicity.

**Table 13.**  
**Low Birthweight<sup>1</sup> Births by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1994**

Age	Total		White*		Black*		Hispanic		Asian*		Other		Unknown	
	LBW	N % <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>All Ages</b>	5,335	6.4	3,599	5.6	772	12.3	657	7.8	225	6.7	70	7.4	12	7.3
<b>20 +</b>	4,735	6.1	3,352	5.5	642	12.2	465	7.2	206	6.4	59	7.2	11	6.8
<b>&lt; 20</b>	600	9.1	247	7.5	130	13.1	192	9.8	19	10.1	11	8.7	1	**
<b>18-19</b>	336	8.5	166	7.6	76	13.2	84	8.2	6	5.9	4	**	0	0.0
<b>&lt;18</b>	264	10.2	81	7.3	54	12.8	108	11.7	13	15.1	7	14.9	1	**
<b>15-17</b>	241	9.9	80	7.5	47	12.1	94	11.0	12	15.6	7	14.9	1	**
<b>12-14</b>	23	14.8	1	**	7	19.4	14	20.3	1	**	0	0.0	0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Percentages are based on number of low birthweight infants divided by the number of total births in each category.

- In 1994, the overall percentage of low birthweight (LBW) births increased as maternal age decreased. The youngest teen mothers (ages 12 to 14 years) had the highest LBW percentage (14.8%), followed by 15 to 17 year olds (9.9%), and 18 to 19 year olds ( 8.5%).
- The association between age of teen mother and LBW percentages differed across race/Hispanic ethnicity groups, however. The LBW percentage was higher for mothers under age 18 than for mothers 18 to 19 years old among Hispanic and Asian teens, whereas the LBW percentages were similar between the two age groups among black and white non-Hispanic teens.
- The percentage of LBW infants among all teen births was highest for black non-Hispanic women compared to all other race/Hispanic ethnicity groups.

**Table 14.**  
**Low Birthweight Among Teen Births**  
**by Level of Prenatal Care and Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 1994**

Mother's Race/ Ethnicity	Level of Prenatal Care¹								
	Adequate			Intermediate			Late/None		
	Births	Low Birthweight²		Births	Low Birthweight²		Births	Low Birthweight²	
	N³	N	%	N³	N	%	N³	N	%
< 20 Years	4,437	397	8.9	1,684	148	8.8	424	48	11.3
White*	2,347	178	7.6	759	52	6.9	185	13	7.0
Black*	598	73	12.2	298	38	12.8	97	18	18.6
Hispanic	1,322	130	9.8	511	49	9.6	112	12	10.7
Asian*	99	10	10.1	70	5	7.1	19	4	**
Other*	70	6	8.6	45	4	**	11	1	**
Unknown	1	0	0.0	1	0	0.0	0	0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Adequacy of Prenatal Care is determined from an index which combines trimester of prenatal care registration with the number of prenatal care visits. The index is adjusted for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. Intermediate care requires second trimester registration and at least five prenatal visits. See Glossary for further explanation.

<sup>2</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>3</sup> Births with unknown birthweight and adequacy of prenatal care were excluded.

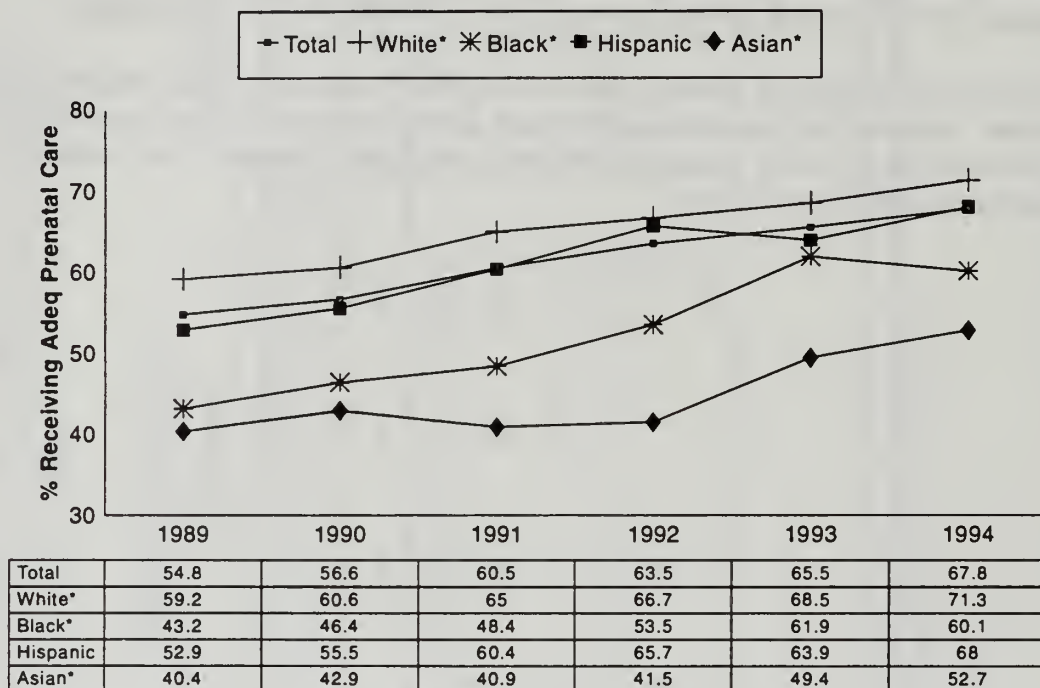


- The percentage of low birthweight (LBW) infants to teens receiving late or no prenatal care declined slightly, from 13.6% in 1993 to 11.3% in 1994 (1993 data not shown).
- Overall, in 1994, the percentage of LBW infants was higher among teen mothers (age < 20 years) with late or no prenatal care (11.3%) than among teen mothers with an adequate or intermediate level of prenatal care (8.9% and 8.8%, respectively).
- The impact of inadequate prenatal care was especially strong for black non-Hispanic teen mothers, who had 6.4 percentage points more LBW births among those receiving late or no prenatal care (18.6%), compared with those black non-Hispanic teens receiving adequate prenatal care (12.2%).



Figure 8.

## Trends in Percent of Women under Age 20 Receiving Adequate Prenatal Care<sup>1</sup> by Race/Hispanic Ethnicity Massachusetts: 1989-1994



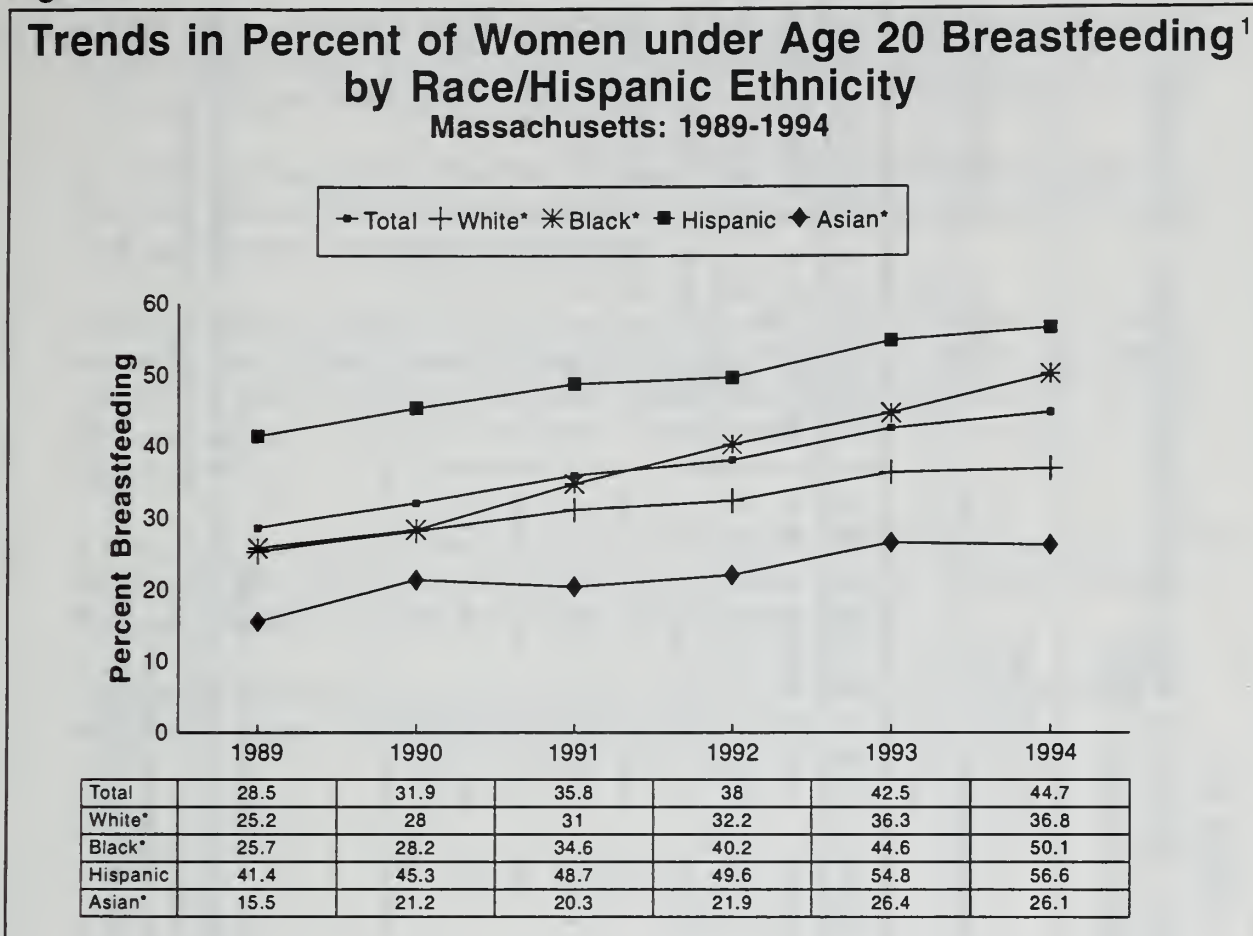
Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

<sup>1</sup> Adequacy of Prenatal Care is determined from an index that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. See Glossary for further explanation.

- Between 1989 and 1994, the percentage of births to women under age 20 receiving adequate prenatal care increased for all race/Hispanic ethnicity groups. The overall percentage of women under age 20 receiving adequate prenatal care increased from 54.8% in 1989 to 67.8% in 1994.
- Asian teen births consistently had the lowest percentages of adequate prenatal care, and white non-Hispanic teen births the highest percentages.

Figure 9.



Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

<sup>1</sup> Mother was breastfeeding or intending to breastfeed at time the birth certificate was completed.

- The overall percentage of teen mothers indicating either that they were breastfeeding their infant during their hospital stay or that they intended to breastfeed increased from 28.5% in 1989 to 44.7% to 1994.
- Between 1989 and 1994, the percentage of teen mothers reporting breastfeeding or intention to breastfeed increased consistently for all race/Hispanic ethnicity groups, except Asians.
- Asian teen mothers consistently reported the lowest percentages of breastfeeding or intention to breastfeed, while Hispanic teen mothers reported the highest percentages.

**Table 15.**  
**Prenatal and Birth Characteristics By Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1994**

Mother's Race/Ethnicity	Birthweight <sup>1</sup>			Prenatal Care				C-Section		Breastfeeding <sup>3</sup>		
	Very Low		Low	Adequate Care <sup>2</sup>		First Trimester						
	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>
All Ages	976	1.2	5,335	6.4	70,440	84.3	74,393	89.0	17,289	20.7	53,211	64.7
20 + Years < 20 Years	861	1.1	4,735	6.1	66,003	85.7	69,631	90.4	16,480	21.4	50,299	66.4
	115	1.8	600	9.1	4,437	67.8	4,762	72.7	809	12.3	2,912	44.7
White*	45	1.4	247	7.5	2,347	71.3	2,497	75.8	429	13.0	1,199	36.8
Black*	33	3.3	130	13.1	598	60.1	661	66.4	121	12.2	497	50.1
Hispanic	33	1.7	192	9.8	1,322	68.0	1,417	72.8	224	11.5	1,101	56.6
Asian*	1	**	19	10.1	99	52.7	107	56.9	11	5.9	49	26.1
Other*	3	**	11	8.7	70	55.6	78	61.9	24	19.0	65	51.6
Unknown	0	0.0	1	**	1	**	2	**	0	0.0	1	**

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Very low birthweight: < 1,500 grams or 3.3 pounds. Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Adequacy of Prenatal Care is determined from an index that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. See Glossary for further explanation.

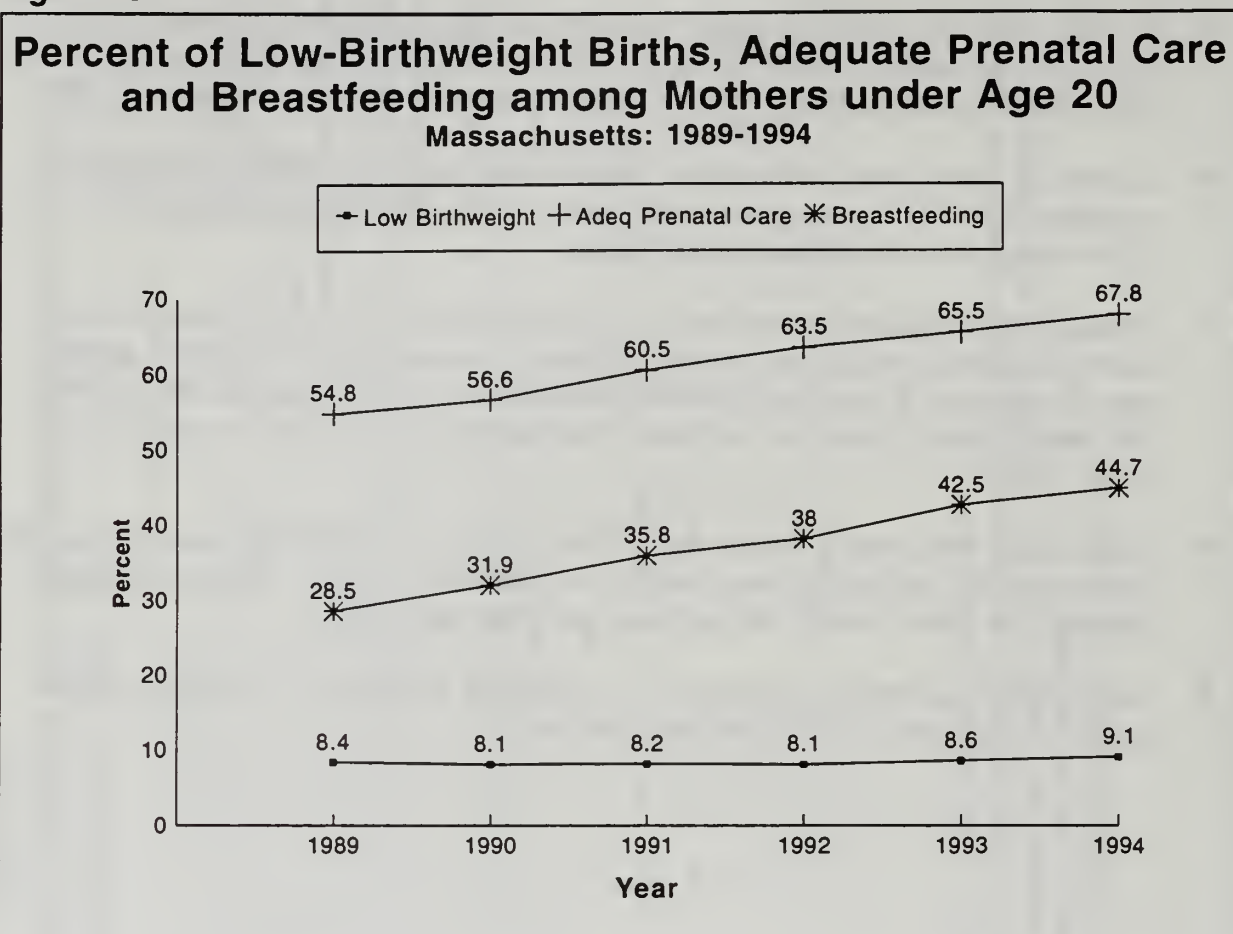
<sup>3</sup> Mother was breastfeeding or intending to breastfeed at time the birth certificate was completed.

<sup>4</sup> Includes only cases where birthweight, prenatal care, cesarean section and breastfeeding information is known.

- In 1994, while very low birthweight (VLBW) was rare, it occurred more often among infants of teen mothers (1.8%) than among infants of mothers age 20 and over (1.1%). Black non-Hispanic teen births had the highest percentage of VLBW infants at 3.3%.
- In 1994, 13.1% of births to black non-Hispanic teens were low birthweight (LBW), compared with 10.1% among Asian teen births, 9.8% among Hispanic teen births, and 7.5% among white non-Hispanic teen births.
- Although the percentage of teen mothers receiving adequate prenatal care has been increasing (see Figure 8), teen mothers still lagged substantially behind older mothers (age 20 and over) in receipt of adequate prenatal care (67.8% versus 85.7%) in 1994. The same disparity is seen for initiation of prenatal care in the first trimester (72.7% versus 90.4%).
- While one in five births to women age 20 and older (21.4%) were delivered by cesarean section in 1994, one in eight teen births were cesareans (12.3%). These percentages changed little from those for the previous year (data not shown).
- Teen mothers had lower percentages of breastfeeding or intention to breastfeed than mothers age 20 and older (44.7% versus 66.4%).



Figure 10.



Source: Registry of Vital Records and Statistics, MDPH, 1994.

- Since 1989, the overall percentages of teen mothers receiving adequate prenatal care and reporting breastfeeding (or intention to breastfeed) have improved substantially. In 1994, more than two-thirds of teen births were to mothers who had received adequate prenatal care, an increase of 13 percentage points since 1989. The percentage of breastfeeding teen mothers increased 16.2 percentage points since 1989, up to 44.7% in 1994.
- In contrast, the percentage of LBW infants among teen births has varied very little over the five years.



**Table 16.**  
**Teen Births by Gestational Age, Mother's Age, and Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 1994**

Mother's Age and Gestational Age <sup>1</sup> (weeks completed)	Total		White*		Black*		Hispanic		Asian*		Other*		Unknown	
	N	% <sup>2</sup>	N	%	N	%	N	%	N	%	N	%	N	%
<b>20 Years and Over</b>														
< 37 weeks	5,839	7.6	4,241	6.9	748	14.2	588	9.1	188	5.9	67	8.1	7	4.3
37-41 weeks	67,280	87.2	53,716	87.7	4,294	81.6	5,568	85.9	2,886	90.4	709	86.1	107	66.5
42 + <sup>3</sup> weeks	3,879	5.0	3,175	5.2	215	4.1	320	4.9	118	3.7	45	5.5	6	3.7
Unknown	193	0.3	141	0.2	4	**	3	**	2	**	2	**	41	25.5
<b>Less than 20 Years</b>														
< 37 weeks	649	9.9	277	8.4	132	13.2	206	10.6	20	10.6	13	10.3	1	**
37-41 weeks	5,492	83.6	2,786	84.3	809	81.1	1,631	83.6	161	85.6	104	82.5	1	**
42 + <sup>3</sup> weeks	417	6.3	235	7.1	54	5.4	111	5.7	7	3.7	9	7.1	1	**
Unknown	9	0.1	5	0.2	2	**	2	**	0	0.0	0	0.0	0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Clinical estimate of the number of weeks of pregnancy completed as estimated by the attendant at birth or the postnatal physician. Normal gestational age is defined as delivery between the completion of the 37th and the 42nd week of pregnancy.

<sup>2</sup> Percentages are based on column totals.

<sup>3</sup> The majority (334 out of 417) of this group completed no more than 42 weeks gestation.

- The percentage of premature births to teens (9.9%) was slightly larger than the percentage of premature births to women age 20 and over (7.6%).
- As in 1993, prematurity (<37 weeks gestation) was more common among black non-Hispanic (13.2%), Hispanic (10.6%), and Asian (10.6%) teen births than among white non-Hispanic teen births (8.4%). The percentage of premature births among black non-Hispanic teen births increased slightly from 11.7% in 1993 to 13.2% in 1994 (1993 data not shown).

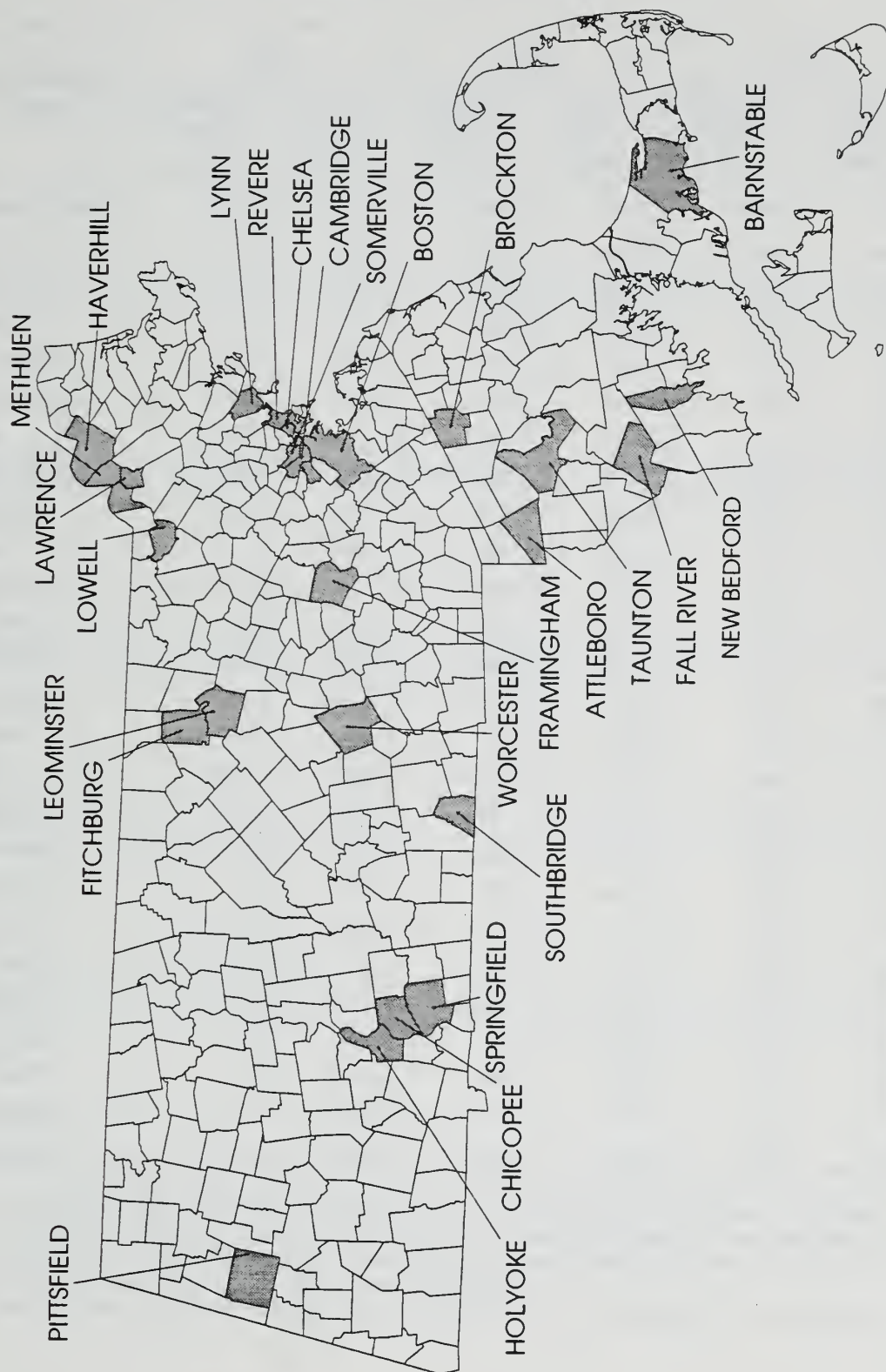


### *III.*

## *Birth Characteristics for Selected Communities*

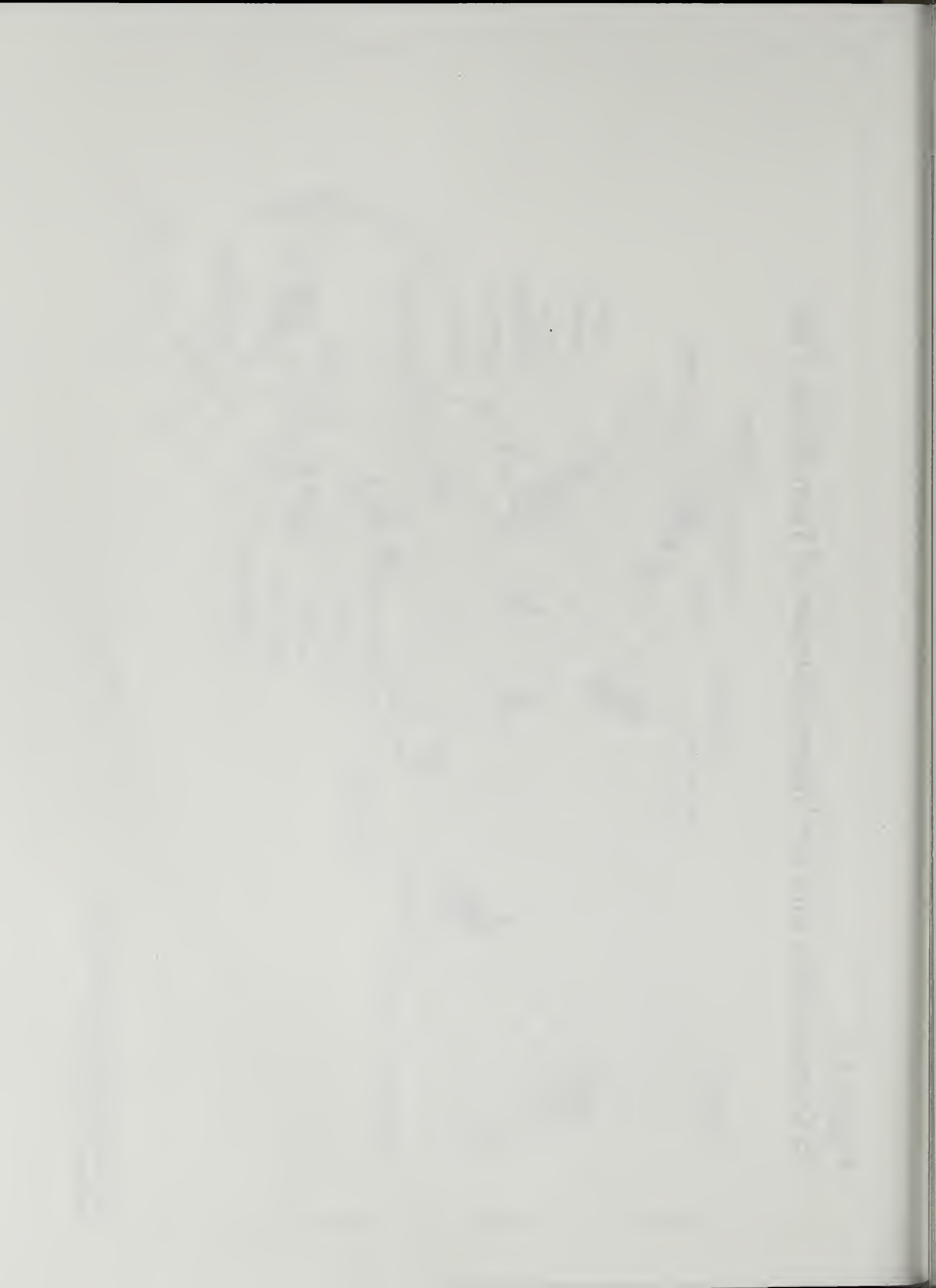


**Figure 11.**  
**25 Communities with the Highest Number of Teen Births, 1994**



Source: Registry of Vital Records and Statistics, MDPH  
 Map Produced by OSE, BFCH, MDPH





**Table 17.**  
**Trends in Birth Rates Among Women Ages 15-19**  
**for Selected Communities<sup>1</sup>, Ranked by 1994 Teen Birth Rate<sup>2</sup>**  
**Massachusetts: 1994, 1990, 1985**

1994 Rank	Demographic Area	1994		1990		1985	
		Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate
	<b>Massachusetts</b>	<b>6,412</b>	<b>31.2</b>	<b>7,258</b>	<b>35.1</b>	<b>6,857</b>	<b>28.6</b>
1	Holyoke	196	135.7	203	140.3	182	104.3
2	Lawrence	338	129.1	338	122.8	269	100.6
3	Chelsea	97	111.6	105	114.8	67	67.3
4	Springfield	563	96.6	523	87.9	398	59.8
5	Southbridge	50	87.0	48	82.5	43	66.8
6	Lynn	197	81.3	194	79.4	170	59.2
7	New Bedford	265	77.8	263	76.3	218	57.6
8	Brockton	204	62.7	216	67.8	240	62.8
9	Lowell	237	60.5	309	81.3	254	61.0
10	Fitchburg	106	60.1	146	82.1	100	46.7
11	Taunton	87	54.6	95	61.0	76	43.1
12	Worcester	345	53.0	399	58.8	312	42.1
13	Fall River	166	52.3	246	76.9	238	67.9
14	Revere	49	46.6	45	42.3	24	16.7
15	Boston	981	45.8	1,137	52.7	1,158	46.7
16	Haverhill	76	44.1	94	60.4	80	43.3
17	Leominster	52	43.0	42	37.8	62	45.0
18	Attleboro	49	40.3	53	45.9	57	42.5
19	Methuen	52	39.3	53	41.7	44	30.7
20	Barnstable	43	37.4	37	34.3	36	31.5
21	Chicopee	69	37.1	84	44.9	59	26.7
22	Somerville	73	36.1	64	29.2	83	29.2
23	Pittsfield	48	31.5	74	48.3	69	34.8
24	Framingham	53	23.9	44	19.6	48	17.4
25	Cambridge	51	17.6	54	14.9	68	18.0

Sources: Registry of Vital Records and Statistics, MDPH, 1985, 1990, 1994; 1990 population data are based on the 1990 Census Massachusetts Age, Race and Sex File (MARS File); the 1994 data are interpolations based on the 1990 Census and the 1994 estimates from the Massachusetts Institute for Social and Economic Research (MISER); and the 1985 data are interpolations based on the 1980 and 1990 censuses and estimates from MISER.

<sup>1</sup> 25 communities with the greatest number of 1994 teen births. <sup>2</sup> Rates are per 1,000 females ages 15-19 in each city/town.

**Table 18.**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1994**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
<b>Massachusetts</b>	All Ages	64,576	6,258	8,429	3,382	1,113	83,758 <sup>2</sup>
	< 18	1,111	423	923	86	49	2,592
	< 20	3,303	997	1,950	188	129	6,567
	20 +	61,273	5,261	6,479	3,194	984	77,191
<b>Attleboro</b>	All Ages	592	9	41	24	12	678
	< 18	9	0	**	**	0	13
	< 20	38	0	7	**	**	49
	20 +	554	9	34	¥	¥	629
<b>Barnstable</b>	All Ages	459	15	30	7	17	528
	< 18	12	**	**	**	2	19
	< 20	34	**	**	**	3	44
	20 +	425	¥	¥	¥	14	484
<b>Boston</b>	All Ages	2,942	3,044	1,716	575	173	8,450
	< 18	55	218	136	8	3	420
	< 20	136	519	318	27	11	1,011
	20 +	2,806	2,525	1,398	548	162	7,439
<b>Brockton</b>	All Ages	805	322	164	34	117	1,442
	< 18	36	20	25	**	**	87
	< 20	92	47	50	5	14	208
	20 +	713	275	114	29	103	1,234
<b>Cambridge</b>	All Ages	624	198	119	133	27	1,101
	< 18	**	**	**	**	1	11
	< 20	16	16	16	**	**	51
	20 +	608	182	103	¥	¥	1,050
<b>Chelsea</b>	All Ages	178	47	343	40	9	617
	< 18	5	**	25	**	0	35
	< 20	20	8	66	**	**	99
	20 +	158	39	277	¥	¥	518

**Table 18. (Continued)**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1994**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Chicopee	All Ages	554	15	78	10	1	658
	< 18	7	**	6	0	**	15
	< 20	43	**	24	**	0	71
	20 +	511	¥	54	¥	1	587
Fall River	All Ages	1143	27	29	51	5	1255
	< 18	56	**	**	**	0	62
	< 20	160	**	**	5	1	169
	20 +	983	¥	¥	46	4	1086
Fitchburg	All Ages	373	37	126	25	4	565
	< 18	19	5	26	**	**	52
	< 20	50	11	42	¥	**	109
	20 +	323	26	84	¥	**	456
Framingham	All Ages	625	46	194	44	20	929
	< 18	5	**	16	**	0	24
	< 20	19	5	31	**	**	56
	20 +	606	41	163	¥	¥	873
Haverhill	All Ages	758	15	62	11	13	859
	< 18	20	**	5	0	**	27
	< 20	63	5	9	0	1	78
	20 +	695	10	53	11	12	781
Holyoke	All Ages	260	29	515	5	3	812
	< 18	12	**	80	**	0	96
	< 20	27	**	173	**	1	205
	20 +	233	¥	342	**	2	607
Lawrence	All Ages	429	33	945	30	4	1,441
	< 18	26	**	139	**	0	168
	< 20	68	9	271	**	**	351
	20 +	361	24	674	¥	**	1,090



**Table 18. (Continued)**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1994**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Leominster	All Ages	529	21	93	18	4	665
	< 18	9	0	13	**	**	25
	< 20	24	0	25	**	**	53
	20 +	505	21	68	¥	**	612
Lowell	All Ages	984	63	297	327	14	1,685
	< 18	44	6	40	20	2	112
	< 20	108	11	78	42	4	243
	20 +	876	52	219	285	10	1,44
Lynn	All Ages	786	156	315	143	18	1,418
	< 18	34	14	31	16	1	96
	< 20	80	32	67	23	1	203
	20 +	706	124	248	120	17	1,215
Methuen	All Ages	463	4	70	14	3	554
	< 18	6	**	16	0	**	22
	< 20	30	**	23	0	**	53
	20 +	433	**	47	14	**	501
New Bedford	All Ages	994	88	204	11	115	1,412
	< 18	57	15	21	**	¥	106
	< 20	155	32	51	**	¥	268
	20 +	839	56	153	¥	¥	1,144
Pittsfield	All Ages	534	24	9	4	8	579
	< 18	16	**	**	0	1	20
	< 20	41	**	**	**	2	49
	20 +	493	¥	¥	**	6	530
Revere	All Ages	438	43	75	44	9	609
	< 18	8	**	7	**	0	19
	< 20	21	11	13	**	**	49
	20 +	417	32	62	¥	¥	560



**Table 18. (Continued)**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1994**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Somerville	All Ages	583	140	198	67	20	1,008
	< 18	12	5	8	0	1	26
	< 20	33	12	26	**	**	74
	20 +	550	128	172	¥	¥	934
Southbridge	All Ages	187	0	80	9	0	276
	< 18	12	0	13	0	0	25
	< 20	27	0	23	0	0	50
	20 +	160	0	57	9	0	226
Springfield	All Ages	1,100	698	845	55	28	2,726
	< 18	40	72	151	5	4	272
	< 20	116	154	301	9	5	585
	20 +	984	544	544	46	23	2,141
Taunton	All Ages	734	25	30	5	18	812
	< 18	27	**	7	0	**	37
	< 20	70	**	10	0	¥	88
	20 +	664	¥	20	5	¥	724
Worcester	All Ages	1,612	195	497	151	20	2,475
	< 18	57	15	76	7	0	155
	< 20	156	37	151	14	3	361
	20 +	1,456	158	346	137	17	2,114

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\* Non-Hispanic

\*\* In communities where the total number of births to women is less than 1,500, information in cells with values less than 5 (excluding the "Other/Unknown" cells) is suppressed when births are cross-classified by age group and race/ethnicity in order to preserve the confidentiality of these cases. In these cases, additional cells with values less than 5 which enable calculation of the number of cases are also suppressed.

¥ These cells have numbers greater than 5 but the numbers were suppressed to prevent inferring the value of the suppressed cell which contains fewer than 5 cases.

<sup>1</sup> 25 communities with the greatest number of teen births.

<sup>2</sup> Includes births of unknown maternal age.

**Table 19.**  
**Birth Characteristics Among Teen Mothers for Selected Communities<sup>1</sup>**  
**Massachusetts: 1994**

Community	Birthweight		Adequacy of Care <sup>2</sup>			Parity <sup>2</sup>	
	<2500 g	2500+ g	Adequate	Interm	Inadeq /None	One	Two+
	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>	Percent <sup>3</sup>
Massachusetts	9.1	90.8	67.5	25.9	6.6	79.8	20.2
Attleboro	10.2	89.8	65.3	28.6	6.1	75.5	24.5
Barnstable	0.0	100.0	61.4	25.0	13.6	90.9	**
Boston	12.3	87.6	71.0	22.7	6.3	79.3	20.7
Brockton	10.1	89.9	50.7	37.2	12.1	76.3	23.7
Cambridge	5.9	94.1	49.0	27.5	23.5	88.2	11.8
Chelsea	8.1	91.9	59.2	28.6	12.2	72.7	27.3
Chicopee	4.2	95.8	73.2	21.1	5.6	80.3	19.7
Fall River	11.8	88.2	69.2	26.6	4.1	85.2	14.8
Fitchburg	11.9	88.1	63.3	31.2	5.5	79.8	20.2
Framingham	5.4	94.6	83.9	14.3	1.8	76.8	23.2
Haverhill	5.1	94.9	71.4	23.4	5.2	80.8	19.2
Holyoke	8.8	91.2	52.0	37.7	10.3	60.0	40.0
Lawrence	9.7	90.3	80.3	17.4	2.3	69.8	30.2
Leominster	9.4	90.6	71.7	22.6	5.7	75.5	24.5
Lowell	12.4	87.6	68.5	27.8	3.7	77.7	22.3
Lynn	8.9	91.1	64.9	26.2	8.9	75.9	24.1
Methuen	9.4	90.6	71.7	24.5	3.8	77.4	22.6
New Bedford	7.5	91.0	65.3	25.4	9.3	74.3	25.7
Pittsfield	8.2	91.8	79.6	14.3	6.1	87.8	12.2
Revere	14.3	85.7	61.2	34.7	4.1	69.4	30.6
Somerville	2.7	97.3	72.6	21.9	5.5	79.7	20.3
Southbridge	10.0	90.0	72.0	22.0	6.0	86.0	14.0
Springfield	9.4	90.6	54.3	37.5	8.2	69.9	30.1
Taunton	11.4	88.6	67.0	27.3	5.7	78.4	21.6
Worcester	12.2	87.8	76.7	19.7	3.6	78.4	21.6

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\*\* Percentages were not calculated for fewer than five observations.

<sup>1</sup> 25 communities with the greatest number of teen births.

<sup>2</sup> Adequacy of Prenatal Care is determined from an index which combines trimester of prenatal care registration with the number of prenatal care visits. See Glossary for definitions.

<sup>3</sup> Percentages are calculated only for cases where information is known.

**Table 20.**  
**Expected Educational Attainment Among Teen Mothers**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1994**

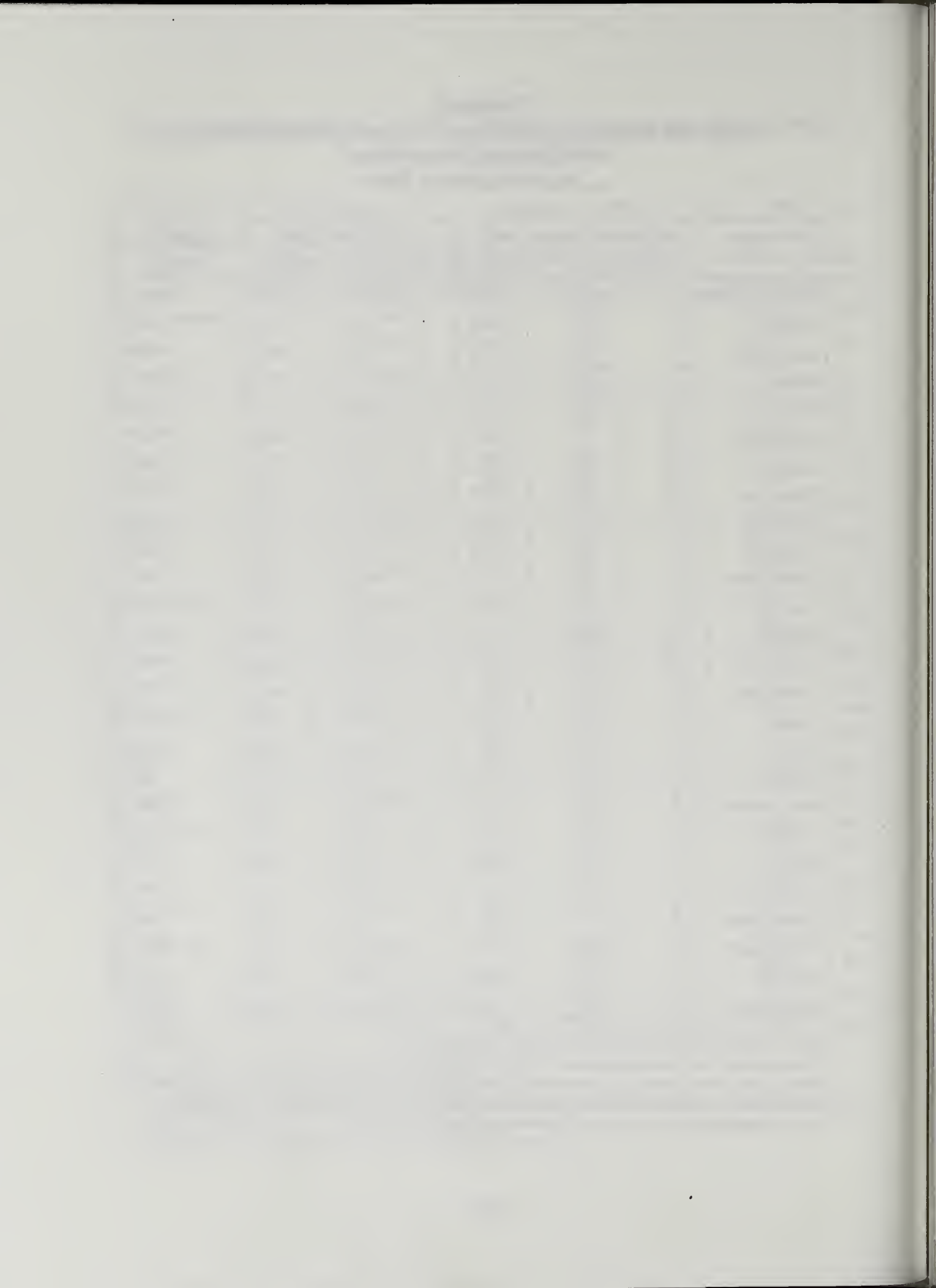
Community	Behind Grade Level <sup>2</sup>		At Grade Level		Total <sup>3</sup>
	Number	Percent	Number	Percent	Number
<b>Massachusetts</b>	<b>1,756</b>	<b>26.7</b>	<b>4,800</b>	<b>73.1</b>	<b>6,567</b>
Attleboro	12	24.5	36	73.5	49
Barnstable	14	31.8	30	68.2	44
Boston	244	24.1	767	75.9	1,011
Brockton	58	27.9	149	71.6	208
Cambridge	7	13.7	44	86.3	51
Chelsea	26	26.3	73	73.7	99
Chicopee	26	36.6	45	63.4	71
Fall River	44	26.0	125	74.0	169
Fitchburg	24	22.0	84	77.1	109
Framingham	12	21.4	44	78.6	56
Haverhill	18	23.1	58	74.4	78
Holyoke	108	52.7	97	47.3	205
Lawrence	119	33.9	232	66.1	351
Leominster	19	35.8	34	64.2	53
Lowell	71	29.2	170	70.0	243
Lynn	51	25.1	152	74.9	203
Methuen	10	18.9	43	81.1	53
New Bedford	79	29.5	189	70.5	268
Pittsfield	10	20.4	39	79.6	49
Revere	19	38.8	30	61.2	49
Somerville	21	28.4	53	71.6	74
Southbridge	17	34.0	33	66.0	50
Springfield	222	37.9	363	62.1	585
Taunton	29	33.0	59	67.0	88
Worcester	120	33.2	241	66.8	361

Source: Registry of Vital Records and Statistics, MDPH, 1994.

<sup>1</sup> 25 communities with the greatest number of teen births.

<sup>2</sup> Behind grade level is defined as one or more grades behind the maximum expected age for a grade at the time of delivery. Adjustments were made for foreign-born students. See Glossary for explanation.

<sup>3</sup> Total includes records with unknown mother's education.



#### *IV.*

### *Birth Characteristics for all 351 Communities and the 27 Community Health Network Areas*



The first of these is the  
 fact that the system is  
 not self-sufficient. It  
 requires a constant input  
 of energy from the sun.  
 This is the only source  
 of energy available to  
 the system.

**Table 21.**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
<b>Massachusetts</b>	<b>83,758</b>	<b>2,592</b>	<b>6,567</b>	<b>4,762</b>	<b>4,853</b>
Abington	222	2	10	7	6
Acton	264	1	3	**	**
Acushnet	84	6	12	11	7
Adams	91	0	5	**	**
Agawam	321	10	21	13	10
Alford	4	0	0	0	0
Amesbury	249	8	20	13	13
Amherst	181	3	10	8	7
Andover	347	3	4	**	**
Arlington	551	2	7	6	**
Ashburnham	62	0	7	**	5
Ashby	33	2	3	**	**
Ashfield	19	0	0	0	0
Ashland	228	0	1	**	**
Athol	130	8	17	12	15
Attleboro	678	13	49	35	31
Auburn	172	4	9	7	0
Avon	52	0	1	**	**
Ayer	118	3	10	**	6
Barnstable	528	19	44	29	31
Barre	57	0	0	0	0
Becket	19	0	1	**	**
Bedford	226	0	1	**	**

**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Belchertown	189	0	1	**	**
Bellingham	240	0	14	13	8
Belmont	291	0	0	0	0
Berkley	91	0	1	**	**
Berlin	30	1	3	**	**
Bernardston	14	0	2	**	**
Beverly	495	11	24	17	10
Billerica	595	3	19	13	12
Blackstone	123	2	11	6	**
Blandford	10	1	1	**	**
Bolton	55	0	0	0	0
Boston	8,450	420	1,011	765	758
Bourne	218	2	10	8	8
Boxborough	81	0	1	**	**
Boxford	93	0	2	**	0
Boylston	59	0	0	0	0
Braintree	386	4	12	10	7
Brewster	89	2	3	**	**
Bridgewater	277	2	11	9	6
Brimfield	31	1	1	**	**
Brockton	1,442	87	208	121	167
Brookfield	45	2	4	**	**
Brookline	585	0	1	**	**
Buckland	25	0	0	0	0

**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Burlington	303	2	4	**	**
Cambridge	1,101	11	51	29	29
Canton	236	0	2	**	**
Carlisle	51	0	0	0	0
Carver	122	3	6	**	**
Charlemont	14	0	0	0	0
Charlton	159	4	12	11	6
Chatham	40	0	2	**	**
Chelmsford	443	2	10	9	**
Chelsea	617	35	99	62	84
Cheshire	34	0	0	0	0
Chester	21	1	1	**	**
Chesterfield	15	0	0	0	0
Chicopee	658	15	71	54	58
Chilmark	5	0	0	0	0
Clarksburg	21	1	3	**	**
Clinton	233	8	23	16	17
Cohasset	92	0	1	**	**
Colrain	14	1	1	**	**
Concord	169	1	2	**	**
Conway	23	0	0	0	0
Cummington	5	0	0	0	0
Dalton	62	2	5	**	**
Danvers	279	4	9	9	**

**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Dartmouth	237	9	18	14	11
Dedham	307	3	5	5	**
Deerfield	47	1	1	**	**
Dennis	118	1	2	**	**
Dighton	66	1	2	**	**
Douglas	90	0	8	7	5
Dover	75	1	1	**	**
Dracut	428	7	21	19	10
Dudley	129	1	8	7	7
Dunstable	43	0	0	0	0
Duxbury	160	0	2	**	**
East Bridgewater	176	3	6	**	**
East Brookfield	30	1	2	**	**
East Longmeadow	144	1	3	**	**
Eastham	31	0	1	**	**
Easthampton	199	5	14	11	8
Easton	305	3	12	8	5
Edgartown	44	0	3	**	**
Egremont	9	**	**	**	**
Erving	13	1	1	**	**
Essex	52	0	0	0	0
Everett	538	19	41	27	28
Fairhaven	164	7	16	12	13
Fall River	1,255	62	169	121	147



**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Falmouth	308	8	24	21	18
Fitchburg	565	52	109	74	84
Florida	8	0	0	0	0
Foxborough	225	4	7	5	0
Framingham	929	24	56	49	41
Franklin	506	5	9	8	5
Freetown	90	1	3	**	0
Gardner	265	7	30	24	22
Gay Head	1	0	0	0	0
Georgetown	99	0	0	0	0
Gill	19	0	0	0	0
Gloucester	355	7	21	17	14
Goshen	8	0	0	0	0
Gosnold	1	0	0	0	0
Grafton	203	3	9	7	**
Granby	76	0	5	**	**
Granville	15	0	0	0	0
Great Barrington	71	2	5	**	**
Greenfield	228	11	40	30	26
Groton	124	1	1	**	**
Groveland	84	1	3	**	**
Hadley	34	0	0	0	0
Halifax	103	0	0	0	0
Hamilton	100	0	1	**	**

**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Hampden	49	1	1	**	**
Hancock	7	0	**	**	**
Hanover	139	0	2	**	0
Hanson	143	5	13	8	6
Hardwick	34	2	3	**	**
Harvard	164	1	13	11	13
Harwich	112	1	4	**	**
Hatfield	38	1	2	**	**
Haverhill	859	27	78	57	55
Hawley	6	0	**	**	**
Heath	8	0	**	**	**
Hingham	254	0	1	**	**
Hinsdale	20	0	1	**	**
Holbrook	118	2	7	6	5
Holden	188	3	5	**	**
Holland	22	1	2	**	**
Holliston	189	0	1	**	**
Holyoke	812	96	205	118	184
Hopedale	96	1	3	**	0
Hopkinton	203	0	0	0	0
Hubbardston	51	1	2	**	**
Hudson	296	5	16	15	6
Hull	173	6	15	10	13
Huntington	29	4	4	**	**

**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Ipswich	172	1	3	**	**
Kingston	175	3	9	6	7
Lakeville	116	2	7	**	**
Lancaster	69	1	1	**	**
Lanesborough	27	0	1	**	**
Lawrence	1,441	168	351	296	290
Lee	78	0	7	6	**
Leicester	118	3	4	**	**
Lenox	50	0	0	0	0
Leominster	665	25	53	41	37
Leverett	16	1	1	**	**
Lexington	282	1	3	**	**
Leyden	5	0	0	0	0
Lincoln	50	0	0	0	0
Littleton	135	0	2	**	**
Longmeadow	142	1	4	**	**
Lowell	1,685	112	243	175	197
Ludlow	175	5	11	7	6
Lunenburg	106	1	4	**	**
Lynn	1,418	96	203	139	152
Lynnfield	113	0	0	0	0
Malden	769	18	42	27	28
Manchester	54	0	0	0	0
Mansfield	413	6	20	15	10

**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Marblehead	246	0	0	0	0
Marion	41	0	1	**	**
Marlborough	595	12	31	27	22
Marshfield	368	3	15	12	6
Mashpee	137	4	15	11	13
Mattapoisett	71	1	2	**	**
Maynard	163	2	4	**	**
Medfield	165	0	0	0	0
Medford	635	8	30	17	20
Medway	195	1	3	**	**
Melrose	358	1	11	8	5
Mendon	62	0	2	**	**
Merrimac	84	1	3	**	**
Methuen	554	22	53	39	36
Middleborough	280	2	15	13	12
Middlefield	4	0	0	0	0
Middleton	78	1	2	**	**
Milford	356	5	23	20	17
Millbury	157	3	12	9	8
Millis	153	0	2	**	**
Millville	50	2	4	**	**
Milton	281	2	3	0	**
Monroe	0	0	0	0	0
Monson	103	1	6	**	**



**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Montague	101	5	13	9	8
Monterey	13	1	2	0	**
Montgomery	7	0	0	0	0
Mount Washington	2	0	0	0	0
Nahant	41	1	2	**	0
Nantucket	93	1	1	**	**
Natick	483	5	9	9	5
Needham	338	1	4	**	**
New Ashford	2	0	0	0	0
New Bedford	1,412	106	268	191	217
New Braintree	6	0	0	0	0
New Marlborough	17	0	0	0	0
New Salem	8	0	0	0	0
Newbury	78	0	1	**	**
Newburyport	214	1	7	6	5
Newton	875	0	1	**	**
Norfolk	156	0	0	0	0
North Adams	180	12	37	26	30
North Andover	341	4	8	7	**
North Attleborough	380	9	16	14	6
North Brookfield	52	1	4	**	**
North Reading	187	0	3	**	**
Northampton	253	5	12	10	9
Northborough	174	1	2	**	0



**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began In 1st Trimester	Number Paid by Public Funds
Northbridge	182	7	17	12	8
Northfield	21	0	0	0	0
Norton	278	3	11	6	6
Norwell	108	1	1	**	**
Norwood	374	3	7	**	**
Oak Bluffs	35	2	2	**	**
Oakham	23	0	1	**	**
Orange	103	4	18	11	16
Orleans	43	0	1	**	**
Otis	14	1	2	**	0
Oxford	182	5	15	13	7
Palmer	149	0	17	14	11
Paxton	30	0	2	**	0
Peabody	606	5	29	20	22
Pelham	17	0	0	0	0
Pembroke	235	2	6	**	**
Pepperell	165	2	5	**	**
Peru	12	0	2	**	**
Petersham	11	0	0	0	0
Phillipston	16	0	1	**	**
Pittsfield	579	20	49	41	33
Plainfield	7	0	0	0	0
Plainville	120	1	4	**	**
Plymouth	686	6	22	20	13

**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Plympton	34	1	1	**	**
Princeton	50	0	0	0	0
Provincetown	18	1	2	**	0
Quincy	1,177	14	42	34	25
Randolph	409	4	18	10	8
Raynham	121	0	6	**	5
Reading	298	0	5	5	**
Rehoboth	94	1	2	**	0
Revere	609	19	49	31	39
Richmond	17	1	1	**	**
Rochester	49	0	4	**	**
Rockland	263	4	8	**	**
Rockport	64	1	2	**	**
Rowe	5	0	0	0	0
Rowley	97	1	4	**	**
Royalston	11	1	1	**	**
Russell	16	0	1	**	**
Rutland	71	2	7	7	**
Salem	543	16	36	26	26
Salisbury	76	2	6	**	5
Sandisfield	4	0	0	0	0
Sandwich	243	4	7	6	**
Saugus	300	0	3	**	**
Savoy	11	0	0	0	0

**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began In 1st Trimester	Number Paid by Public Funds
Scituate	235	0	1	**	**
Seekonk	133	3	6	5	**
Sharon	223	0	1	**	**
Sheffield	43	0	3	**	**
Shelburne	27	1	2	**	**
Sherborn	53	0	0	0	0
Shirley	84	4	7	5	5
Shrewsbury	402	3	7	5	5
Shutesbury	17	0	0	0	0
Somerset	138	2	10	9	8
Somerville	1,008	26	74	55	58
South Hadley	182	5	11	7	6
Southampton	57	0	0	0	0
Southborough	126	0	1	**	**
Southbridge	276	25	50	38	39
Southwick	91	2	5	**	**
Spencer	141	3	13	12	8
Springfield	2,726	272	585	360	511
Sterling	86	1	2	**	**
Stockbridge	16	0	1	**	**
Stoneham	285	1	6	6	**
Stoughton	323	0	10	9	6
Stow	84	0	1	**	**
Sturbridge	85	0	2	**	**

**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Sudbury	210	2	3	**	**
Sunderland	51	1	5	**	5
Sutton	86	0	4	**	**
Swampscott	156	0	0	0	0
Swansea	149	4	11	8	9
Taunton	812	37	88	62	58
Templeton	80	1	6	5	**
Tewksbury	458	2	7	**	5
Tisbury	34	0	0	0	0
Tolland	2	0	0	0	0
Topsfield	64	0	0	0	0
Townsend	115	2	4	**	**
Truro	15	0	0	0	0
Tyngsborough	152	3	6	**	**
Tyringham	4	0	0	0	0
Upton	110	0	2	**	**
Uxbridge	177	3	6	5	5
Wakefield	339	2	9	7	5
Wales	31	1	3	**	**
Walpole	310	2	2	**	0
Waltham	740	14	37	25	22
Ware	126	2	14	13	13
Wareham	275	11	28	22	20
Warren	73	2	8	6	6



**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Warwick	8	0	**	**	**
Washington	9	0	0	0	0
Watertown	425	2	4	**	**
Wayland	148	0	1	**	**
Webster	213	7	25	21	18
Wellesley	321	0	0	0	0
Wellfleet	21	0	2	0	**
Wendell	7	0	**	**	**
Wenham	43	0	0	0	0
West Boylston	71	1	2	**	0
West Bridgewater	56	0	2	**	**
West Brookfield	37	2	3	**	**
West Newbury	45	0	1	**	**
West Springfield	366	15	33	25	26
West Stockbridge	12	0	1	**	**
West Tisbury	19	0	0	0	0
Westborough	207	5	8	6	**
Westfield	482	11	39	21	29
Westford	289	0	3	**	**
Westhampton	11	0	0	0	0
Westminster	63	0	0	0	0
Weston	106	0	2	**	**
Westport	145	3	10	9	6
Westwood	155	1	2	**	**



**Table 21. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1994**

Community	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Weymouth	724	8	27	21	13
Whately	13	0	0	0	0
Whitman	189	0	8	8	**
Wilbraham	103	2	3	**	**
Williamsburg	30	1	1	**	**
Williamstown	45	0	1	**	**
Wilmington	296	2	3	**	**
Winchendon	113	2	7	6	**
Winchester	251	1	2	**	**
Windsor	12	0	0	0	0
Winthrop	196	2	9	6	6
Woburn	491	5	16	12	12
Worcester	2,475	155	361	291	284
Worthington	9	0	**	**	**
Wrentham	155	0	3	**	**
Yarmouth	234	6	12	8	10

Source: Registry of Vital Records and Statistics, MDPH, 1994.

\*\* For communities where Number of Births to All Ages is less than 10, cells with values of 1-4 are suppressed. For all communities, "Prenatal Care (< 20 Years)" cells with values of 1-4 suppressed. For communities where the number of teen births ("<20 Years") equals one, prenatal care cells are suppressed.

**Table 22.**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1994**

Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
<b>Massachusetts</b>	<b>83,758</b>	<b>2,592</b>	<b>6,567</b>	<b>4,437</b>	<b>1,384</b>
1 Pittsfield Area	1,493	41	129	102	90
2 Greenfield Area	980	35	108	78	81
3 Holyoke/Chicopee/Northampton Area	3,285	143	380	252	314
4 Springfield Area	4,474	316	696	432	587
5 Southbridge Area	1,609	57	158	126	108
6 Milford Area	2,894	28	111	89	61
7 Framingham/Marlborough Area	4,436	57	139	121	85
8 Worcester Area	3,875	175	411	329	305
9 Fitchburg/Gardner Area	3,457	118	298	217	215
10 Lowell Area	4,093	129	309	224	233
11 Lawrence Area	2,761	198	418	345	330
12 Haverhill Area	1,978	41	125	89	86
13 Beverly/Gloucester Area	1,399	20	51	39	27
14 Lynn/Salem Area	3,589	122	282	198	205
15 Woburn Area	4,179	17	71	56	40
16 Medford/Malden Area	3,364	101	270	170	205
17 Cambridge/Somerville Area	3,376	41	136	93	92
18 Newton/Waltham Area	3,502	20	53	40	29
19 City of Boston	8,450	420	1,011	765	758

**Table 22. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1994**

Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
20 Quincy Area	3,705	37	118	86	66
21 Attleboro Area	2,317	36	108	79	56
22 Brockton Area	3,042	97	268	168	199
23 Plymouth Area	3,290	34	103	72	58
24 Taunton Area	1,713	46	127	92	79
25 Fall River Area	1,687	71	200	147	170
26 New Bedford Area	2,423	141	352	256	274
27 Cape/Islands Area	2,387	51	135	97	100

Source: Registry of Vital Records and Statistics, MDPH, 1994.

<sup>1</sup> See Appendix for Community Health Network Area definition and city/town groupings.



## *Appendix*





## *Technical Notes*

We recommend that the following cautions be kept in mind when examining the data:

- In cases where there are small numbers of teen births, especially at the city/town level and by race/ethnicity or age, small changes in the numbers from year to year will produce large changes in percentages, making the differences appear more significant than they are in reality.
- Percentages are based on the number of births or mothers that have known information regarding a demographic or birth characteristic unless otherwise stated.
- Birth rates (number of births per 1,000 women) are calculated using Census counts of the resident population of Massachusetts. Because the Census is taken only once every ten years, the annual numbers of residents in each city/town and in the state for non-Census years are projected estimates, not actual counts. Therefore, the numbers of resident women may be underestimated (resulting in inflated birth rates), or overestimated (resulting in lower birth rates).

# Glossary

**Adequacy of prenatal care:** Adequacy of prenatal care is calculated from information reported by the birth hospital. The index of Adequacy of Prenatal Care (based on the Kessner Index) has three categories (adequate, intermediate, inadequate/none) based on the trimester in which prenatal care began and the number of prenatal visits. The general classification scheme is:

<u>Category</u>	<u>Trimester Care Began</u>	<u>Number of Visits</u>
Adequate	1	9 or more
Intermediate	1	5-8
	2	5 or more
Inadequate/None	1	1-4
	2	1-4
	3	1 or more

The classification is adjusted for gestational age to allow for proper classification of premature infants.

**Birth Rate:** see Teen Birth Rate.

**Birthweight Categories:** Birthweight is the weight of an infant recorded at the time of delivery.

**Normal Birthweight (NBW):** An infant's weight of 2,500 grams (5.5 pounds) or more

**Low Birthweight (LBW):** An infant's weight of less than 2,500 grams (5.5 pounds)

**Very Low Birthweight (VLBW):** An infant's weight of less than 1,500 grams (3.3 pounds)

**Education:** Education is self-reported on the birth certificate by the mother and indicates the highest grade or total number of years of schooling she has completed.

**Ethnicity:** Mother's ethnicity is self-reported.

**Expected Educational Attainment:** Refers to the maximum expected age of a student in a particular school grade. Teen mothers were classified as being at least one grade behind if they were two or more years older than the maximum expected age for the reported grade level. For example, if a teen is 16 years old and reports she has completed eighth grade, then she is at least one year behind the expected age for that grade. The following age-for grade cutoffs were used:

<u>Grade</u>	<u>Maximum Expected Age</u>
6th	12
7th	13
8th	14
9th	15
10th	16
11th	17
12th	18

Due to language or educational differences, foreign-born youth are often placed in school at least one grade behind the expected grade. As a result, the foreign-born teen mothers were classified as being at least one grade behind if they were *three* or more years older than the maximum expected.

**Gestational Age:** The length of time a fetus is *in utero* before birth. In this publication, the clinical estimate of gestational age has been used for analysis. Clinical gestational age is determined by the attendant at birth or a physician providing postnatal care to the newborn. A normal gestational age is defined as delivery between the completion of the 37th and the 42nd week of pregnancy.

**Healthy Start:** Healthy Start is a Massachusetts-funded program providing services and financing for prenatal care to low-income (up to 200% of the poverty level) pregnant women who lack health insurance but do not qualify for Medicaid.

**Live Birth:** A live birth is defined as any infant who breathes or shows any other evidence of life (such as beating of the heart, pulsation of the umbilical code, or definite movement of voluntary muscles) after delivery. All figures and tables in this report, showing Massachusetts data, are based on live births to Massachusetts residents (see Resident Birth).

**Low Birthweight:** see Birthweight Categories.

**Normal Birthweight:** see Birthweight Categories.



**Mother's Age:** Mother's age is computed from her date of birth and the date of delivery.

**Multiparous:** A multiparous mother is one who has had at least one previous live birth.

**Parity:** The number of live infants ever born to the mother. Parity includes all previous live births as well as the infant named on the birth certificate.

**Paternity Acknowledgement:** The process by which the paternity of an infant is legally established when the parents are unmarried. As part of the birth registration process, parents sign an acknowledgement form and their signatures are notarized. The father's information is then added to the child's birth certificate. Paternity can also be acknowledged at a town clerk's office after the mother and child have been discharged from the hospital. Paternity may be established through legal action or through voluntary acknowledgement in the case of unmarried couples; when a couple is married, the husband is legally considered the infant's father.

**Prenatal Care Payment Source:** Prenatal care payment source is self-reported by the mother. Groupings include:

- |            |   |
|------------|---|
| Private:   | Blue Cross/Blue Shield, commercial insurance, and health maintenance organizations (HMOs). The HMO category may include Medicaid recipients in managed care programs. |
| Public:    | Medicaid, Healthy Start, Medicare and other government sources (e.g., CHAMPUS).   |
| Uninsured: | Care paid for out of pocket or provided free of charge.   |
| Other:     | Workers' Compensation and other specified types of funding not classified elsewhere.  |

**Race/Hispanic Ethnicity:** Mother's race and Hispanic ethnicity are self-reported.

**Resident Birth:** Resident birth is defined as the birth of an infant whose mother reports her usual place of residence as Massachusetts. In Massachusetts, a resident is a person with a permanent address in one of the 351 cities or towns. Massachusetts resident births include all births that occur among residents of the Commonwealth whether they occur in Massachusetts or elsewhere.

**Teen Birth Rate:** The number of children born among females ages 15 to 19 divided by the population of females in that age group, multiplied by 1,000.

**Very Low Birthweight:** see Birthweight Categories.



# **1994 Population Estimates of Females Ages 15 to 19 Years Living in 25 Massachusetts Communities with the Highest Number of Teen Births in 1994**

<u>Community</u>	<u>Estimated Number of Females, Ages 15-19 years</u>
Attleboro	1,217
Barnstable	1,151
Boston	21,425
Brockton	3,251
Cambridge	2,902
Chelsea	869
Chicopee	1,861
Fall River	3,175
Fitchburg	1,765
Framingham	2,220
Haverhill	1,722
Holyoke	1,444
Lawrence	2,619
Leominster	1,208
Lowell	3,919
Lynn	2,424
Methuen	1,323
New Bedford	3,407
Pittsfield	1,523
Revere	1,052
Somerville	2,021
Southbridge	575
Springfield	5,831
Taunton	1,593
Worcester	6,515

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Source: 1994 estimates from the Massachusetts Institute for Social and Economic Research (MISER).

Massachusetts Cities, Towns, Counties, and Community Health Network Area (CHNAs)

City/Town	County	CHNA	City/Town	County	CHNA
Abington	Plymouth	22	Dartmouth	Bristol	26
Acton	Middlesex	15	Dedham	Norfolk	18
Acushnet	Bristol	26	Deerfield	Franklin	2
Adams	Berkshire	1	Dennis	Barnstable	27
Agawam	Hampden	4	Dighton	Bristol	24
Alford	Berkshire	1	Douglas	Worcester	6
Amesbury	Essex	12	Dover	Norfolk	18
Amherst	Hampshire	3	Dracut	Middlesex	10
Andover	Essex	11	Dudley	Worcester	5
Arlington	Middlesex	17	Dunstable	Middlesex	10
Ashburnham	Worcester	9	Duxbury	Plymouth	23
Ashby	Middlesex	9	East Bridgewater	Plymouth	22
Ashfield	Franklin	2	East Brookfield	Worcester	5
Ashland	Middlesex	7	East Longmeadow	Hampden	4
Athol	Worcester	2	Eastham	Barnstable	27
Attleboro	Bristol	21	Easthampton	Hampshire	3
Auburn	Worcester	8	Easton	Bristol	22
Avon	Norfolk	22	Edgartown	Dukes	27
Ayer	Middlesex	9	Egremont	Berkshire	1
Barnstable	Barnstable	27	Erving	Franklin	2
Barre	Worcester	9	Essex	Essex	13
Becket	Berkshire	1	Everett	Middlesex	16
Bedford	Middlesex	15	Fairhaven	Bristol	26
Belchertown	Hampshire	3	Fall River	Bristol	25
Bellingham	Norfolk	6	Falmouth	Barnstable	27
Belmont	Middlesex	17	Fitchburg	Worcester	9
Berkley	Bristol	24	Florida	Berkshire	1
Berlin	Worcester	7	Foxborough	Norfolk	21
Bernardston	Franklin	2	Frammingham	Middlesex	7
Beverly	Essex	13	Franklin	Norfolk	6
Billerica	Middlesex	10	Freetown	Bristol	26
Blackstone	Worcester	6	Gardner	Worcester	9
Blandford	Hampden	4	Gay Head	Dukes	27
Bolton	Worcester	9	Georgetown	Essex	12
Boston	Suffolk	19	Gill	Franklin	2
Bourne	Barnstable	27	Gloucester	Essex	13
Boxborough	Middlesex	15	Goshen	Hampshire	3
Boxford	Essex	12	Gosnold	Dukes	27
Boylston	Worcester	8	Grafton	Worcester	8
Braintree	Norfolk	20	Granby	Hampshire	3
Brewster	Barnstable	27	Granville	Hampden	4
Bridgewater	Plymouth	22	Great Barrington	Berkshire	1
Brimfield	Hampden	5	Greenfield	Franklin	2
Brockton	Plymouth	22	Groton	Middlesex	9
Brookfield	Worcester	5	Groveland	Essex	12
Brookline	Norfolk	18	Hadley	Hampshire	3
Buckland	Franklin	2	Halifax	Plymouth	23
Burlington	Middlesex	15	Hamilton	Essex	13
Cambridge	Middlesex	17	Hampden	Hampden	4
Canton	Norfolk	20	Hancock	Berkshire	1
Carlisle	Middlesex	15	Hanover	Plymouth	23
Carver	Plymouth	23	Hanson	Plymouth	23
Charlemont	Franklin	2	Hardwick	Worcester	9
Charlton	Worcester	5	Harvard	Worcester	9
Chatham	Barnstable	27	Harwich	Barnstable	27
Chelmsford	Middlesex	10	Hatfield	Hampshire	3
Chelsea	Suffolk	16	Haverhill	Essex	12
Cheshire	Berkshire	1	Hawley	Franklin	2
Chester	Hampden	3	Heath	Franklin	2
Chesterfield	Hampshire	3	Hingham	Plymouth	23
Chicopee	Hampden	3	Hinsdale	Berkshire	1
Chilmark	Dukes	27	Holbrook	Norfolk	20
Clarksburg	Berkshire	1	Holden	Worcester	8
Clinton	Worcester	9	Holland	Hampden	5
Cohasset	Norfolk	23	Holliston	Middlesex	7
Colrain	Franklin	2	Holyoke	Hampden	3
Concord	Middlesex	15	Hopedale	Worcester	6
Conway	Franklin	2	Hopkinton	Middlesex	7
Cummington	Hampshire	3	Hubbardston	Worcester	9
Dalton	Berkshire	1	Hudson	Middlesex	7
Danvers	Essex	14	Hull	Plymouth	23

City/Town	County	CHNA	City/Town	County	CHNA
Huntington	Hampshire	3	Northampton	Hampshire	3
Ipswich	Essex	13	Northborough	Worcester	7
Kingston	Plymouth	23	Northbridge	Worcester	6
Lakeville	Plymouth	24	Northfield	Franklin	2
Lancaster	Worcester	9	Norton	Bristol	21
Lanesborough	Berkshire	1	Norwell	Plymouth	23
Lawrence	Essex	11	Norwood	Norfolk	20
Lee	Berkshire	1	Oak Bluffs	Dukes	27
Leicester	Worcester	8	Oakham	Worcester	9
Lenox	Berkshire	1	Orange	Franklin	2
Leominster	Worcester	9	Orleans	Barnstable	27
Leverett	Franklin	2	Otis	Berkshire	1
Lexington	Middlesex	15	Oxford	Worcester	5
Leyden	Franklin	2	Palmer	Hampden	3
Lincoln	Middlesex	15	Paxton	Worcester	8
Littleton	Middlesex	15	Peabody	Essex	14
Longmeadow	Hampden	4	Pelham	Hampshire	3
Lowell	Middlesex	10	Pembroke	Plymouth	23
Ludlow	Hampden	3	Pepperell	Middlesex	9
Lunenburg	Worcester	9	Peru	Berkshire	1
Lynn	Essex	14	Petersham	Worcester	2
Lynnfield	Essex	15	Phillipston	Worcester	2
Malden	Middlesex	16	Pittsfield	Berkshire	1
Manchester	Essex	13	Plainfield	Hampshire	3
Mansfield	Bristol	21	Plainville	Norfolk	21
Marblehead	Essex	14	Plymouth	Plymouth	23
Marion	Plymouth	26	Plympton	Plymouth	23
Marlborough	Middlesex	7	Princeton	Worcester	9
Marshfield	Plymouth	23	Provincetown	Barnstable	27
Mashpee	Barnstable	27	Quincy	Norfolk	20
Mattapoisett	Plymouth	26	Randolph	Norfolk	20
Maynard	Middlesex	7	Raynham	Bristol	24
Medfield	Norfolk	7	Reading	Middlesex	15
Medford	Middlesex	16	Rehoboth	Bristol	24
Medway	Norfolk	6	Revere	Suffolk	16
Melrose	Middlesex	15	Richmond	Berkshire	1
Mendon	Worcester	6	Rochester	Plymouth	26
Merrimac	Essex	12	Rockland	Plymouth	23
Methuen	Essex	11	Rockport	Essex	13
Middleborough	Plymouth	24	Rowe	Franklin	2
Middlefield	Hampshire	3	Rowley	Essex	12
Middleton	Essex	11	Royalston	Worcester	2
Milford	Worcester	6	Russell	Hampden	4
Millbury	Worcester	8	Rutland	Worcester	9
Millis	Norfolk	7	Salem	Essex	14
Millville	Worcester	6	Salisbury	Essex	12
Milton	Norfolk	20	Sandisfield	Berkshire	1
Monroe	Franklin	2	Sandwich	Barnstable	27
Monson	Hampden	5	Saugus	Essex	14
Montague	Franklin	2	Savoy	Berkshire	1
Monterey	Berkshire	1	Scituate	Plymouth	23
Montgomery	Hampden	4	Seekonk	Bristol	24
Mt. Washington	Berkshire	1	Sharon	Norfolk	21
Nahant	Essex	14	Sheffield	Berkshire	1
Nantucket	Nantucket	27	Shelburne	Franklin	2
Natick	Middlesex	7	Sherborn	Middlesex	7
Needham	Norfolk	18	Shirley	Middlesex	9
New Ashford	Berkshire	1	Shrewsbury	Worcester	8
New Bedford	Bristol	26	Shutesbury	Franklin	2
New Braintree	Worcester	9	Somerset	Bristol	25
New Marlborough	Berkshire	1	Somerville	Middlesex	17
New Salem	Franklin	2	South Hadley	Hampshire	3
Newbury	Essex	12	Southampton	Hampshire	3
Newburyport	Essex	12	Southborough	Worcester	7
Newton	Middlesex	18	Southbridge	Worcester	5
Norfolk	Norfolk	6	Southwick	Hampden	4
North Adams	Berkshire	1	Spencer	Worcester	5
North Andover	Essex	11	Springfield	Hampden	4
N. Attleborough	Bristol	21	Sterling	Worcester	9
North Brookfield	Worcester	5	Stockbridge	Berkshire	1
North Reading	Middlesex	15	Stoneham	Middlesex	15

City/Town	County	CHNA	
Stoughton	Norfolk	22	
Stow	Middlesex	7	
Sturbridge	Worcester	5	
Sudbury	Middlesex	7	
Sunderland	Franklin	2	
Sutton	Worcester	6	
Swampscott	Essex	14	
Swansea	Bristol	25	
Taunton	Bristol	24	
Templeton	Worcester	9	Community Health Network Areas
Tewksbury	Middlesex	10	
Tisbury	Dukes	27	1. Pittsfield
Tolland	Hampden	4	2. Greenfield
Topsfield	Essex	13	3. Holyoke/Chicopee/Northampton
Townsend	Middlesex	9	4. Springfield
Truro	Barnstable	27	5. Southbridge
Tyngsborough	Middlesex	10	6. Milford
Tyringham	Berkshire	1	7. Framingham/Marlborough
Upton	Worcester	6	8. Worcester
Uxbridge	Worcester	6	9. Fitchburg/Gardner
Wakefield	Middlesex	15	10. Lowell
Wales	Hampden	5	11. Lawrence
Walpole	Norfolk	6	12. Haverhill
Waltham	Middlesex	18	13. Beverly/Gloucester
Ware	Hampshire	3	14. Lynn/Salem
Wareham	Plymouth	26	15. Woburn
Warren	Worcester	5	16. Medford/Malden
Warwick	Franklin	2	17. Cambridge/Somerville
Washington	Berkshire	1	18. Newton/Waltham
Watertown	Middlesex	17	19. City of Boston
Wayland	Middlesex	7	20. Quincy
Webster	Worcester	5	21. Attleboro
Wellesley	Norfolk	18	22. Brockton
Wellfleet	Barnstable	27	23. Plymouth
Wendell	Franklin	2	24. Taunton
Wenham	Essex	13	25. Fall River
West Boylston	Worcester	8	26. New Bedford
West Bridgewater	Plymouth	22	27. Cape/Islands
West Brookfield	Worcester	5	
West Newbury	Essex	12	
West Springfield	Hampden	4	
West Stockbridge	Berkshire	1	
West Tisbury	Dukes	27	
Westborough	Worcester	7	
Westfield	Hampden	4	
Westford	Middlesex	10	
Westhampton	Hampshire	3	
Westminster	Worcester	9	
Weston	Middlesex	18	
Westport	Bristol	25	
Westwood	Norfolk	18	
Weymouth	Norfolk	20	
Whately	Franklin	2	
Whitman	Plymouth	22	
Wilbraham	Hampden	4	
Williamsburg	Hampshire	3	
Williamstown	Berkshire	1	
Wilmington	Middlesex	15	
Winchendon	Worcester	9	
Winchester	Middlesex	15	
Windsor	Berkshire	1	
Winthrop	Suffolk	16	
Woburn	Middlesex	15	
Worcester	Worcester	8	
Worthington	Hampshire	3	
Wrentham	Norfolk	6	
Yarmouth	Barnstable	27	







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# ***Adolescent Births: A Statistical Profile***

## ***Massachusetts 1995***

**Supplement to Advance Data BIRTHS 1995**

***Massachusetts Department of Public Health  
Bureau of Family and Community Health, Office of Statistics and Evaluation  
Bureau of Health Statistics, Research and Evaluation***

***July 1997***

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# ***Adolescent Births: A Statistical Profile***

***Massachusetts  
1995***

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Argeo Paul Cellucci, Lieutenant Governor

Joseph Gallant, Secretary, Executive Office of Health and Human Services

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## Executive Summary

### *Introduction*

*Adolescent Births: A Statistical Profile, Massachusetts, 1995* is a supplement to the publication *Advance Data BIRTHS 1995*, and presents selected annual statistics and trend data on births among adolescent women in Massachusetts, as well as comparisons with national data. The four sections cover: demographic and birth characteristics and teen birth trends for the state as a whole; birthweight, gestational age, adequacy of prenatal care, and infant mortality; teen birth rates and birth characteristics for each of the 25 communities with the highest number of teen births in 1995; and teen birth characteristics for each of the 351 Massachusetts communities and for each of the 27 Community Health Network Areas (CHNAs). Teen births refer to births to resident Massachusetts women under 20 years old, unless specified otherwise. Massachusetts data are from the Registry of Vital Records and Statistics, Massachusetts Department of Public Health (MDPH). United States data are from the Centers for Disease Control and Prevention, National Center for Health Statistics (NCHS).

Overall, Massachusetts continues to have a low birth rate among women ages 15-19 relative to most other states and the nation as a whole.<sup>1</sup> However, some Massachusetts communities have community-specific teen birth rates that are higher than, and in some cases double, the national rate. Moreover, there are still disparities across race/Hispanic ethnicity subgroups in relation to low birthweight births and adequacy of prenatal care. The data presented in this profile are intended to present information that will assist those planning programs, provide evaluators and researchers with reference measures, and assist policy makers in their efforts to address adolescent health issues.

### *Summary*

#### *I. Statewide Demographic and Birth Characteristics*

##### **Number and Percentage of Births to Women under Age 20**

- ✓ In 1995, 6,107 infants were born to Massachusetts women under age 20, a 21.4% decline since 1980, and a 17.3% decline since 1990. This decline is due in part to the decrease in the number and proportion of females ages 12-19 living in Massachusetts from 411,579 (13.7% of all Massachusetts women) in 1980 to 305,509 (9.8%) in 1990.
- ✓ The percentage of all births to Massachusetts women under age 20 (7.5%) declined slightly in 1995 from the previous year (7.8%).

---

<sup>1</sup> National Center for Health Statistics, Department of Health and Human Services, *Vital Statistics of the United States, 1992, Vol. 1, Natality*.



### **Birth Rates among Women Ages 15-19**

- ✓ The number of births per 1,000 women ages 15-19 continued to decline, reaching a new nine-year low of 29.2 in 1995. This rate, however, is higher than the 1981 rate of 27.7. The 1995 rate was about half the 1994 national birth rate to women ages 15-19 of 58.9.

### **Age Distribution of Teen Mothers**

- ✓ The overall distribution of teen births (births to women under age 20) by mother's age has varied little in the past five years, with 18 to 19 year old women accounting for just over 60% of all teen births. In 1995, over one-third (37.3%) of all teen births were among 15-17 year olds, and 1.9% were among teens under age 15.
- ✓ The distribution of teen births by mother's age varied across race/Hispanic ethnicity groups. There was a lower proportion of births to white non-Hispanic teen mothers under age 18 (32.4%) than to Hispanic, black non-Hispanic, or Asian mothers under age 18 (47.9%, 46.7%, 46.1%, respectively).

### **Race/Hispanic Ethnicity Distribution of Teen Births**

- ✓ In 1995, 3,209 (52.5%) of all teen births were to white non-Hispanic mothers; 1,727 (28.3%) were to Hispanic mothers; 865 (14.2%) were to black non-Hispanic mothers; and 163 (2.7%) were to Asian mothers.

### **Mother's Place of Birth**

- ✓ Over 16% of teen mothers were born outside the fifty states in the United States; 8.5% of adult mothers (age 20 years and older) were foreign born.
- ✓ Maternal birthplace varied by race/Hispanic ethnicity and maternal age. In 1995, 100% of African-American teen mothers and 99.6% of African-American adult mothers were born in the U.S., while nearly 94% of Vietnamese teen mothers and 97.5% of Vietnamese adult mothers were born outside the U.S.
- ✓ Among teen mothers, Asians had the highest percentage of birth mothers born outside the U.S. (58.3%), while among adult mothers (age 20 years and older), Hispanics had the highest percentage born outside the U.S. (50.9%).

### **Previous Live Births**

- ✓ Nearly one in five teen births (18.0%) in 1995 were to teen mothers who had at least one previous live birth (multiparous mothers); nearly one in thirty (3.2%) teen births were to mothers who had at least two previous live births.

- ✓ Almost one in four births (23.1%) to mothers ages 18-19 were born to mothers who had at least one previous live birth, whereas 10.2% of births to teens ages 12-17 were born to multiparous mothers.

### **Prenatal Care Payment Source**

- ✓ Teen mothers received publicly-funded prenatal care at higher levels than mothers ages 20 and over. In 1995, 68.7% of teen mothers received publicly-funded prenatal care, compared to 21.6% of mothers ages 20 and over. Both percentages represent declines from the previous year (73.9% and 23.4%, respectively).

### **Marital Status**

- ✓ Of all teen women giving birth in 1995, 89.9% were unmarried. The percentage of births to unmarried teens has been growing steadily since 1980 when it was 56.9%. This trend is reflected among births to women age 20 and older as well; the percentage of births to unmarried women increased from 10.7% in 1980 to 20.4% in 1995.

### **In-Hospital Paternity Acknowledgment**

- ✓ Paternity acknowledgment occurred at a lower rate among births to unmarried teen women than among unmarried adult women. However, both groups experienced increases in paternity acknowledgment in 1995. Paternity acknowledgment among births to adult women increased from 54.5% in 1994 to 60.2% in 1995, while acknowledgment among teens increased from 50.3% in 1994 to 54.2% in 1995.
- ✓ While the in-hospital paternity acknowledgment percentage is consistently the lowest for infants of 12-17 year-old unmarried teen mothers, it has grown from 43.5% in 1993 to 50.0% in 1995. Similarly, the percentage increased among 18-19 year-old teen mothers from 51.6% to 57.1%, respectively.
- ✓ In-hospital paternity acknowledgment for 1995 births to teen women (ages <20 years) varied widely by race/Hispanic ethnicity, ranging from a high of 65.2% among white non-Hispanic mothers and a low of 29.8% among black non-Hispanic mothers, with Hispanics (50.0%) and Asians (31.5%) in between.

### **In-Hospital Paternity Acknowledgment and Father's Age**

- ✓ Among all unmarried teen births with acknowledged paternity, 58.5% of the fathers were age 20 and over, and 12.8% were over age 25. Among infants with 16-17 year-old teen mothers, 44.3% of the fathers were at least 20 years old, while among infants with 12-15 year old teen mothers, 28.2% of the fathers were at least 20 years old.

## ***II. Birth Outcomes and Prenatal Care***

### **Low Birthweight and Gestational Age**

- ✓ The overall percentage of low birthweight (LBW) births to teen mothers decreased slightly, from 9.1% to 8.6% between 1994 and 1995. Among teen births to black non-Hispanic women, the LBW percentage decreased from 13.1% in 1994 to 10.0% in 1995, while the percentages for the white non-Hispanic and Hispanic groups showed little change.
- ✓ As in previous years, the overall low birthweight (LBW) percentage among teen births was higher than the LBW percentage among births to women age 20 and over. In 1995, 9.7% of infants born to women under age 18 were LBW and 7.9% of infants born to 18-19 year olds were LBW, while 6.2% of infants born to women age 20 and over were LBW.
- ✓ The percentage of LBW infants varied by race/Hispanic ethnicity both among teen births and among births to women age 20 and over; the percentage of LBW infants among black non-Hispanic teen births (10.0%) was higher than among white non-Hispanic teen births (7.2%). The LBW percentages among Hispanic and Asian teen births (10.0% and 18.4%) also were higher than among white non-Hispanic teen births.
- ✓ The percentage of premature births (< 37 completed weeks gestation) to teens (9.5%) was larger than the percentage of premature births to women age 20 and over (7.8%). Prematurity among teen births was more common among infants of black non-Hispanic, Hispanic, and Asian teens (11.6%, 11.1%, 14.1%, respectively) than among infants of white non-Hispanic teens (8.0%).

### **Prenatal Care**

- ✓ The overall percentage of teen mothers who had received adequate prenatal care (first trimester registration and at least nine prenatal visits) increased from 56.6% in 1990 to 66.5% in 1995.
- ✓ Between 1994 and 1995, the percentage of teen women receiving adequate prenatal care increased among black non-Hispanics (60.1% to 64.3%) and Asians (52.7% to 57.1%), and declined among Hispanic teen women (68.0% to 64.3%). The percentage changed little for white non-Hispanic teen women (71.3% to 69.2%).
- ✓ In 1995, 85.6% of adult mothers (20 years and older) had received adequate prenatal care; while 66.5% of teen mothers had adequate care.
- ✓ In 1995, 90.6% of mothers 20 years old and over received prenatal care starting in the first trimester, whereas only 72.7% of teen mothers started in the first trimester.



## **Cesarean Sections**

- ✓ In 1995, cesarean sections occurred less frequently among teen births (12.3%) than among births to women age 20 and over (21.3%).

## **Breastfeeding**

- ✓ The percentage of teen mothers indicating either that they were breastfeeding their infant during their hospital stay or that they intended to breastfeed increased from 31.9% in 1990 to 47.5% in 1995.
- ✓ Overall, the percentage of teen mothers (47.5%) who were breastfeeding or intended to breastfeed was lower than the percentage among mothers age 20 and over (67.9%).

## **Infant Mortality**

- ✓ From 1993 to 1994 (the most recent data available for this analysis), the infant mortality rate (IMR, number of deaths per 1,000 infants born) among Massachusetts infants born to teen mothers was unchanged at 9.7, while the IMR among adult women declined very slightly, from 5.8 to 5.6. The difference in infant mortality rate between babies born to teen and adult mothers widened over time. In 1989, teen IMR was 64% higher than adult IMR; in 1994 teen IMR was 73% higher than adult IMR.
- ✓ In 1991, the most recent year for which U.S. teen birth infant mortality data are available, the U.S. IMR among teen births (ages <20 years) was 13.8, while the rate was 10.7 in Massachusetts.
- ✓ Unlike the previous 7 years, in 1994, the Massachusetts infant mortality rate among white teen mothers exceeded that of black teens (10.0 and 8.7, respectively).
- ✓ The risk of infant mortality increases as birthweight declines, and this effect is independent of maternal age. Among normal birthweight infants, the IMR was more than two times greater among teen mothers than among adult mothers (4.2 vs. 2.0, respectively).

## **Smoking during Pregnancy**

- ✓ In 1995, Massachusetts teen mothers smoked cigarettes during pregnancy more frequently than adult mothers (21.5% vs. 12.9%).
- ✓ Among teen mothers, white non-Hispanics had the highest prevalence of smoking, 32.0%, almost three times that of the next highest race/ethnicity, black non-Hispanics, at 11.7%.

### ***III. Birth Characteristics for 25 Massachusetts Communities with Highest Teen Birth Numbers***

Statewide data can mask variation among individual communities. In this section, statistics are given for the 25 Massachusetts communities with the greatest number of births among teens in 1995.

#### **Community Birth Rates**

- ✓ The five Massachusetts communities with the highest teen birth rates in 1995 were Holyoke (117.8 births per 1,000 Holyoke women ages 15-19 years), Lawrence (110.6), Chelsea (86.2), Springfield (77.2), and Lowell (75.5). In 1995, about one in every five (21.3%) infants born among women ages 15-19 years in Massachusetts occurred in these five communities, which accounted for only 8.1% of births to women of all ages. Twenty-three out of the 25 communities with the greatest number of teen births in 1995 were also among the top 25 in 1994.
- ✓ Despite the continued high teen birth rates in these communities, Holyoke, Lawrence, Chelsea, and Springfield all experienced declines from 1994 to 1995. Holyoke's teen birth rate declined from 135.7 to 117.8, Lawrence from 129.1 to 110.6, Chelsea from 111.6 to 86.2, and Springfield from 96.6 to 77.2. On the other hand, Lowell experienced an increase from 60.5 to 75.5.

#### **Race/Hispanic Ethnicity Distribution of Births**

- ✓ In the communities with the four highest teen birth rates, the majority of teen births in 1995 were to Hispanic mothers. The percentage of younger teen mothers (< 18 years) who were Hispanic was 89.7% in Holyoke, 83.7% in Lawrence, 73.1% in Chelsea, and 53.5% in Springfield. Statewide, the largest proportion of younger teen births were to white non-Hispanic mothers (43.4%), followed by Hispanic (34.5%), black non-Hispanic (16.9%) and Asian (3.1%) mothers.

#### **Low Birthweight (LBW)**

- ✓ Among the 25 communities with the greatest number of 1995 teen births, the five communities with the highest percentages of LBW among teen births were Southbridge (18.2%), Pittsfield (14.5%), Leominster (13.1%), Salem (13.0%), and Taunton (12.9%).

#### **Adequacy of Prenatal Care**

- ✓ The five communities with the lowest percentages of adequate prenatal care for teen mothers were Lawrence (45.8%), Brockton (54.3%), New Bedford (55.6%), Springfield (57.5%), and Chelsea (59.5%).
- ✓ In 1995, Attleboro (12.5%), Lawrence (12.5%), Brockton (10.8%), Chelsea (8.1%), and Methuen (8.0%) had the highest percentages of teen births with inadequate or no prenatal care. However, the actual community-specific numbers of teen births with inadequate or no prenatal care are small, causing wide fluctuations in percentages from year to year.



### **Previous Live Births (Parity)**

- ✓ The percentage of births among teens who had at least one previous live birth was highest in Southbridge (36.4%), Holyoke (29.3%), Chelsea (28.0%), Springfield (27.6%), and Fitchburg (25.3%). The statewide percentage of births to teen mothers who had at least one previous live birth was 18.0%.

### **Expected Educational Attainment**

- ✓ The percentage of teen mothers who were one or more school grades behind the expected grade for their age in 1995 was highest in Southbridge (52.3%), Fitchburg (38.9%), Leominster (37.7%), Attleboro (37.5%), and Springfield (36.7%). Statewide, 26.3% of teen births were to mothers who were one or more grades behind.

### **In-Hospital Paternity Acknowledgment**

- ✓ In 1995, Boston (30.9%), Springfield (44.1%), Lawrence (45.8%), Lynn (47.0%), and Worcester (47.7%) had the lowest percentage of teen births for which paternity was acknowledged in-hospital.

## ***IV. Birth Characteristics for all 351 Communities and the 27 Community Health Network Areas (CHNA)***

In this section, the following statistics are presented for each of the 351 cities/towns in Massachusetts and for each of the 27 CHNAs: the number of all births, the number of teen births by mother's age (< 18 years and < 20 years), the number of births among teen mothers (< 20 years) who started prenatal care in the first trimester, and the number whose prenatal care was paid for with public funds. The Community Health Network Areas are aggregations of all Massachusetts cities and towns into 27 groups for the purpose of tracking health status and implementing health improvement efforts. The community groupings were modified in 1997 and the data here reflect the new groupings (see Appendix for most recent CHNA city/town groupings).

- ✓ In 1995, the Greater Holyoke Area had the highest percentage of teen births (14.7%) (almost double the statewide percentage of 7.5%), followed by the Greater Springfield Community Health Network (14.0%) and the Greater Lawrence Area (13.9%).
- ✓ In 1995, the lowest percentage of teen mothers receiving prenatal care starting in the first trimester (63.1%) was found in the Greater Fall River Area. The Brockton CHNA had the next lowest percentage (63.4%).

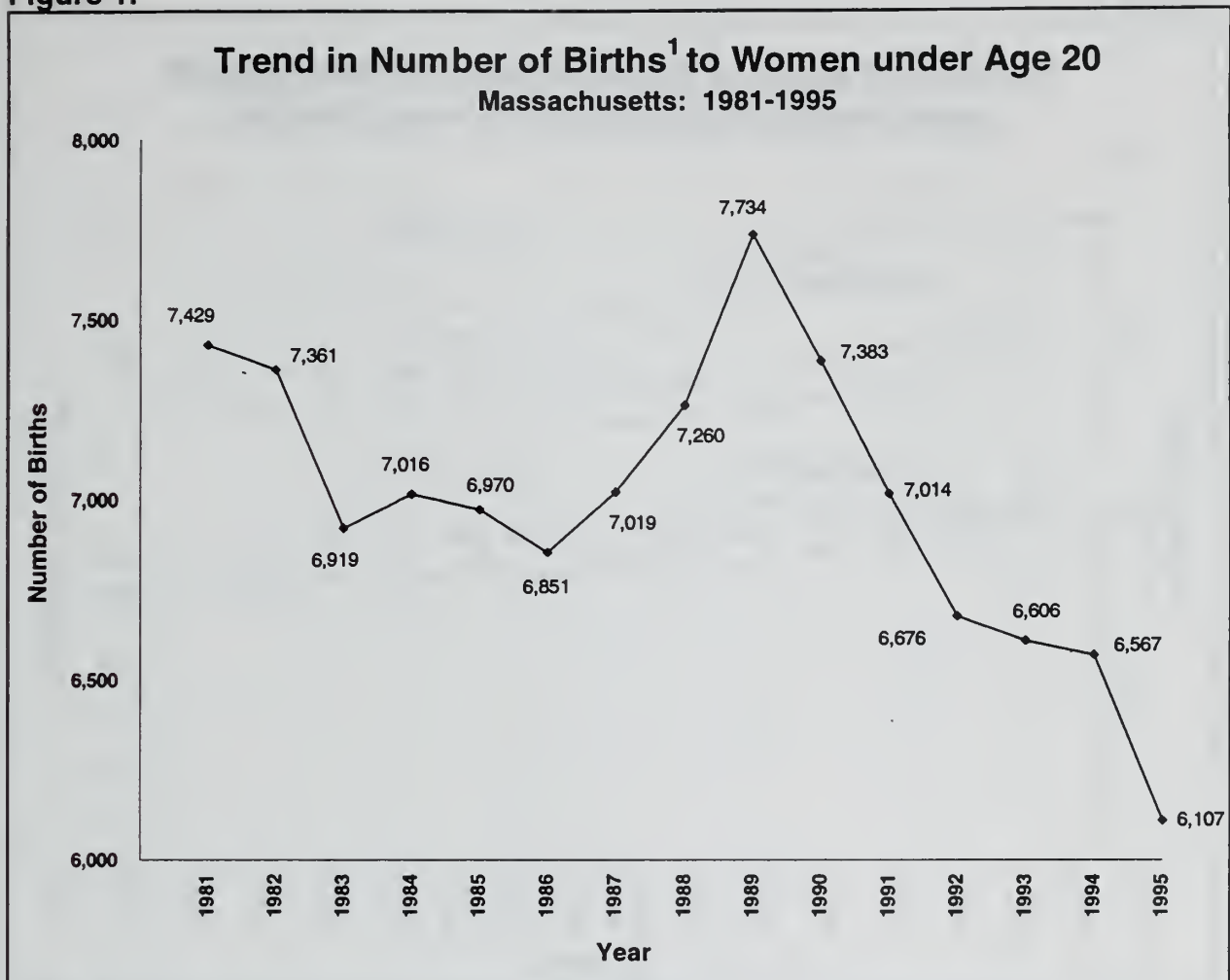


I.

*Demographic  
and Birth  
Characteristics*



Figure 1.



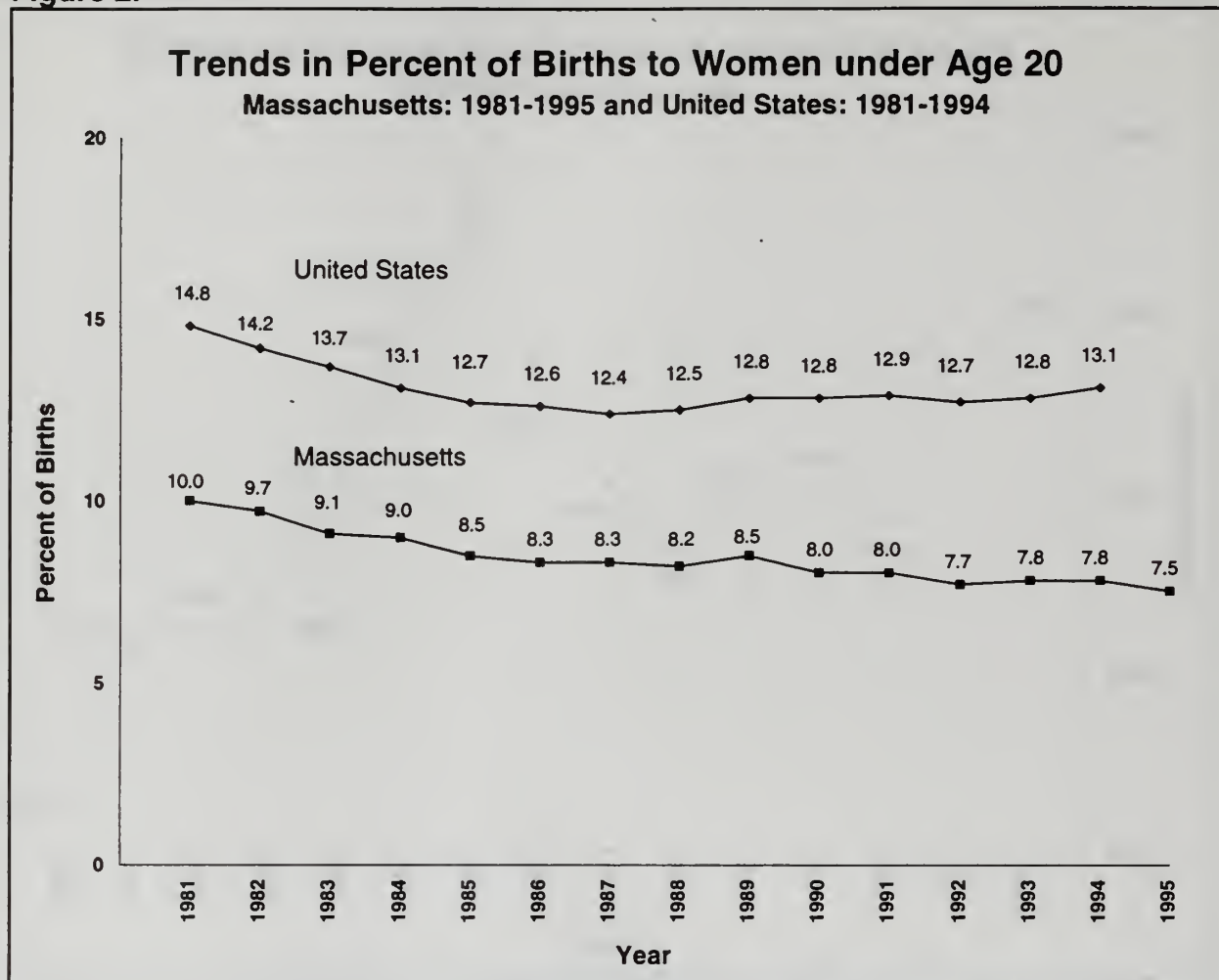
Source: Registry of Vital Records and Statistics, MDPH, 1981-1995.

<sup>1</sup> Births are resident live births.

- In 1995, 6,107 infants were born to women under age 20, a decline of 460 births from the previous year.
- Since 1980, the number of births to teens has declined by 21.4% (data not shown).
- Since 1990, the number of births to teens has declined by 17.3%, whereas the number of births to all women in Massachusetts declined by 11.8% (data not shown).



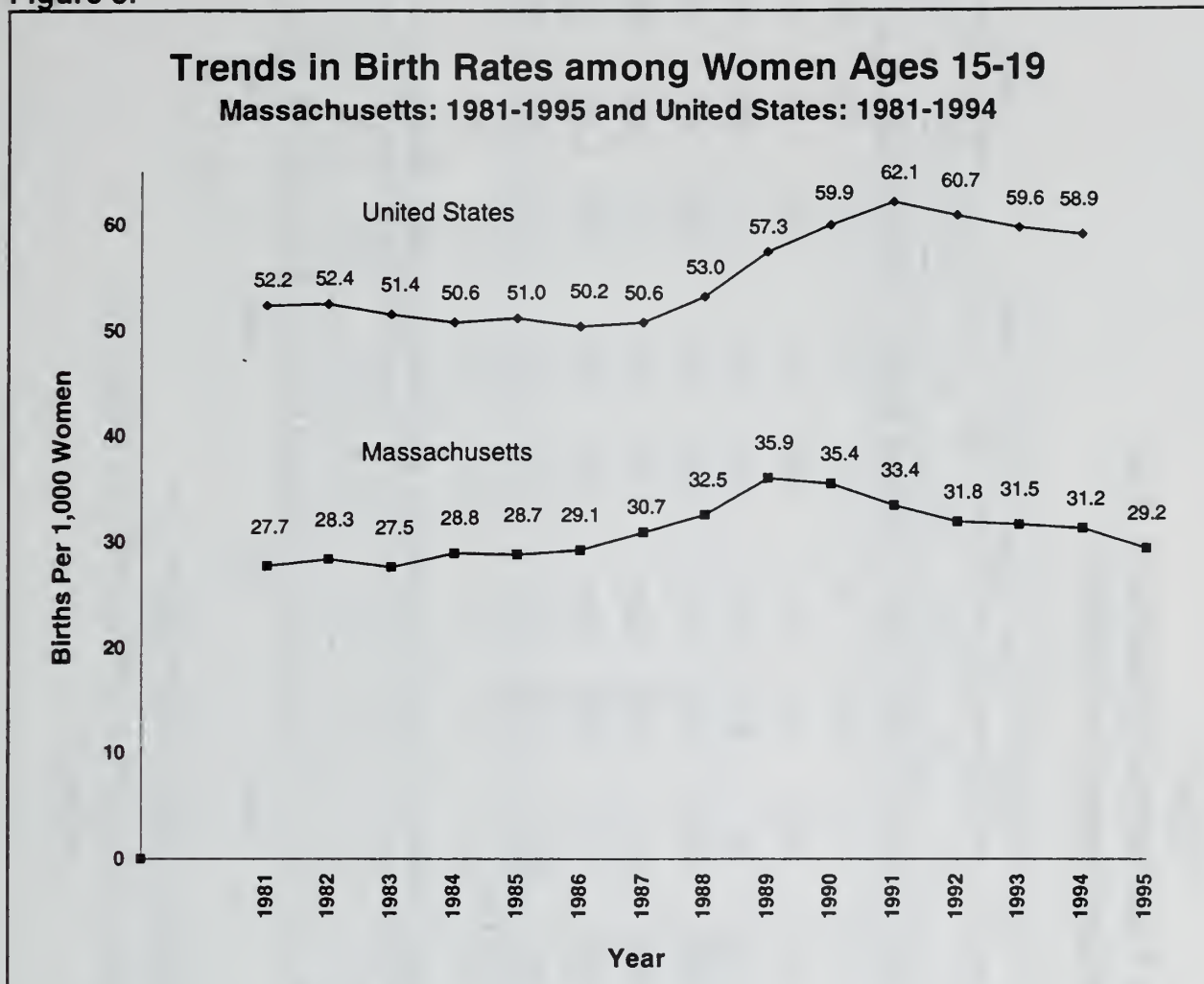
Figure 2.



Sources: Registry of Vital Records and Statistics, MDPH, 1981-1995; National Center for Health Statistics, 1981-1994.

- In 1995, 7.5% of births in Massachusetts were to women under age 20. This is the lowest percentage in the last 15 years.
- The 1995 Massachusetts percentage of births to women under age 20 (7.5%) is well below the 1994 national percentage of 13.1% (1995 national data not yet available).

Figure 3.



Sources: Registry of Vital Records and Statistics, MDPH, 1981-1995; National Center for Health and Statistics, 1981-1994

- The Massachusetts teen birth rate (births per 1,000 women ages 15-19) declined slightly from 31.2 in 1994 to 29.2 in 1995.
- The Massachusetts teen birth rate has declined 18.7% since 1989 (35.9), when it was at its highest point in the last 15 years.
- The 1995 Massachusetts teen birth rate was half of the 1994 national teen birth rate (58.9) (1995 national data not yet available).

**Table 1.**  
**Trends in Teen Births by Mother's Age**  
**Massachusetts: 1990-1995**

Mother's Age	1990		1991		1992		1993		1994		1995	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>12-19</b>	7,382	100.0	7,014	100.0	6,676	100.0	6,606	100.0	6,567	100.0	6,107	100.0
<b>12-13</b>	21	0.3	20	0.3	18	0.3	16	0.2	24	0.4	19	0.3
<b>14</b>	103	1.4	102	1.5	103	1.5	121	1.8	131	2.0	98	1.6
<b>15</b>	351	4.8	372	5.3	341	5.1	360	5.4	371	5.6	356	5.8
<b>16</b>	810	11.0	758	10.8	782	11.7	741	11.2	822	12.5	721	11.8
<b>17</b>	1,344	18.2	1,391	19.8	1,327	19.9	1,259	19.1	1,244	18.9	1,203	19.7
<b>18</b>	2,014	27.3	1,910	27.2	1,753	26.3	1,872	28.3	1,758	26.8	1,648	27.0
<b>19</b>	2,739	37.1	2,461	35.1	2,352	35.2	2,237	33.9	2,217	33.8	2,062	33.8

Source: Registry of Vital Records and Statistics, MDPH: 1990-1995.

- In 1995, 60.8% of all teen births were to women ages 18-19 years, 37.3% were to women ages 15-17 years, and 1.9% were to women under age 15.
- The proportion of all teen births that are born to women under age 18 was virtually unchanged from the previous year (39.5% in 1994 and 39.2% in 1995).
- There were 19 births to women 12 or 13 years old in 1995, 5 fewer than the previous year.

**Table 2.**  
**Trends in Teen Births<sup>1</sup> by Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 1990-1995**

Mother's Race/Ethnicity	1990		1991		1992		1993		1994		1995	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>Total</b>	7,382	100.0	7,014	100.0	6,676	100.0	6,606	100.0	6,567	100.0	6,107	100.0
<b>White*</b>	4,200	56.9	3,836	54.7	3,547	53.1	3,450	52.2	3,303	50.3	3,209	52.5
<b>Black*</b>	1,121	15.2	1,059	15.1	1,058	15.8	1,003	15.2	997	15.2	865	14.2
<b>Hispanic</b>	1,714	23.2	1,769	25.2	1,737	26.0	1,809	27.4	1,950	29.7	1,727	28.3
<b>Asian*</b>	233	3.2	194	2.8	178	2.7	180	2.7	188	2.9	163	2.7
<b>Other*</b>	105	1.4	145	2.1	147	2.2	156	2.4	126	1.9	134	2.2
<b>Unknown</b>	9	0.1	11	0.2	9	0.1	8	0.1	3	**	9	0.1

Source: Registry of Vital Records and Statistics, MDPH: 1990-1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Births to women ages 12-19.

- The majority of births among Massachusetts teens (< 20 years of age) continues to be to white non-Hispanic women (52.5%).
- The proportion of teen births born to black non-Hispanic women declined from 15.2% in 1994 to 14.2% in 1995. A slight decline was also seen in the proportion of teen births born to Hispanic women (29.7% in 1994 to 28.3% in 1995).



**Table 3.**  
**Teen Births by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1995**

Mother's Age	Total		White*		Black*		Hispanic		Asian*		Other*		Unknown	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
< 20	6,107	100.0	3,209	52.5	865	14.2	1,727	28.3	163	2.7	134	2.2	9	0.1
18-19	3,710	60.7	2,169	67.6	461	53.3	901	52.2	88	54.0	83	62.0	8	88.9
16-17	1,924	31.5	877	27.3	315	36.4	633	36.7	56	34.4	42	31.3	1	**
12-15	473	7.7	163	5.1	89	10.3	193	11.2	19	11.7	9	6.7	0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Percents are based on column totals. Percentages may not add up to 100 due to rounding.

- As seen in previous years, a lower proportion of white non-Hispanic teen births in 1995 were to mothers under age 18 (32.4%) than among Hispanic, black non-Hispanic, or Asian teen births (47.9%, 46.7%, and 46.1%, respectively).
- The percentage of white non-Hispanic teen births that were born to mothers under age 16 (5.1%) was about half that of other race/Hispanic ethnicity groups.



**Table 4.**  
**Births by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1995**

Mother's Race/Ethnicity	Under 18 Years		18 to 19 Years		Under 20 Years		20 Years & Over		All Ages	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>Total Births</b>	2,397	100.0	3,710	100.0	6,107	100.0	75,455	100.0	81,562	100.0
<b>White*</b>	1,040	43.4	2,169	58.5	3,209	52.5	59,820	79.3	63,029	77.3
<b>Black*</b>	404	16.9	461	12.4	865	14.2	4,989	6.6	5,854	7.2
<b>African-American</b>	308	12.8	305	8.2	613	10.0	2,434	3.2	3,047	3.7
<b>West Indian</b>	14	0.6	37	1.0	51	0.8	507	0.7	558	0.7
<b>Haitian</b>	21	0.9	29	0.8	50	0.8	903	1.2	953	1.2
<b>Other Black</b>	61	2.5	90	2.4	151	2.5	1,145	8.4	1,296	1.6
<b>Hispanic</b>	826	34.5	901	24.3	1,727	28.3	6,350	8.4	8,077	9.9
<b>Puerto Rican</b>	634	26.4	633	17.1	1,267	20.7	2,792	3.7	4,059	5.0
<b>Dominican</b>	90	3.8	114	3.1	204	3.3	1,181	1.6	1,385	1.7
<b>Central Amer.</b>	46	1.9	66	1.8	112	1.8	910	1.2	1,022	1.3
<b>Other Hispanic</b>	56	2.3	88	2.4	144	2.4	1,467	1.9	1,611	2.0
<b>Asian*</b>	75	3.1	88	2.4	163	2.7	3,273	4.3	3,436	4.2
<b>Vietnamese</b>	19	0.8	30	0.8	49	0.8	566	0.8	615	0.8
<b>Cambodian</b>	33	1.4	27	0.7	60	1.0	424	0.6	484	0.6
<b>Other SE Asian</b>	11	0.5	13	0.4	24	0.4	130	0.2	154	0.2
<b>Chinese</b>	2	**	4	**	6	0.1	1,039	1.4	1,045	1.3
<b>Other Asian</b>	10	0.4	14	0.4	24	0.4	1,114	1.5	1,138	1.4
<b>Other*</b>	51	2.1	83	2.2	134	2.2	838	1.1	972	1.2
<b>Unknown</b>	1	**	8	0.2	9	0.1	185	0.2	194	0.2

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Percentages are based on column totals.

- The race/Hispanic ethnicity distribution of births continued to vary across mother's age groups. In 1995, while 8.4% and 6.6% of births to women 20 years and older were born to Hispanic and black non-Hispanic mothers, respectively, these proportions were much higher among teen births (28.3% and 14.2%, respectively).
- Among teen mothers (< 20 years of age) of black non-Hispanic or Hispanic origin, a higher proportion are under age 18 (16.9% and 34.5%, respectively) than among mothers ages 18 or 19 years (12.4% and 24.3%, respectively).
- The largest ethnic minority group among teen mothers in 1995 was Puerto Rican (20.7%). They comprise 73.4% of teen births born to Hispanic mothers.

Table 5.

# Births by Mother's Age, Place of Birth, and Race/Hispanic Ethnicity Massachusetts: 1995

Mother's Race/Ethnicity	Under 20 Years			20 Years and Over		
	United States <sup>1</sup>		Other <sup>2</sup>	United States <sup>1</sup>		Other <sup>2</sup>
	N	% <sup>3</sup>	N	% <sup>3</sup>	N	% <sup>3</sup>
<b>Total Births</b>	5,117	83.8	990	16.2	69,047	8.5
White*	3,168	98.7	41	1.3	58,842	978
Black*	822	95.0	43	5.0	4,026	963
African Amer.	613	100.0	0	0.0	2,425	9
West Indian	48	94.1	3	**	482	25
Haitian	13	26.0	37	74.0	20	883
Other Black	148	98.0	3	**	1,099	46
Hispanic	924	53.5	803	46.5	3,118	3,232
Puerto Rican	663	52.3	604	47.7	1,147	1,645
Dominican	57	27.9	147	72.1	90	1,091
Central Amer.	69	61.6	43	38.4	505	405
Other Hispanic	135	93.8	9	6.3	1,376	91
Asian*	68	41.7	95	58.3	2,099	1,174
Vietnamese	3	**	46	93.9	14	552
Cambodian	15	25.0	45	75.0	0	424
Other SE Asian	24	100.0	0	0.0	125	5
Chinese	3	**	3	**	934	105
Other Asian	23	95.8	1	**	1,026	88
Other*	126	94.0	8	6.0	791	47
Unknown	9	100.0	0	0.0	171	14

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

1 United States includes the 50 states and the District of Columbia.

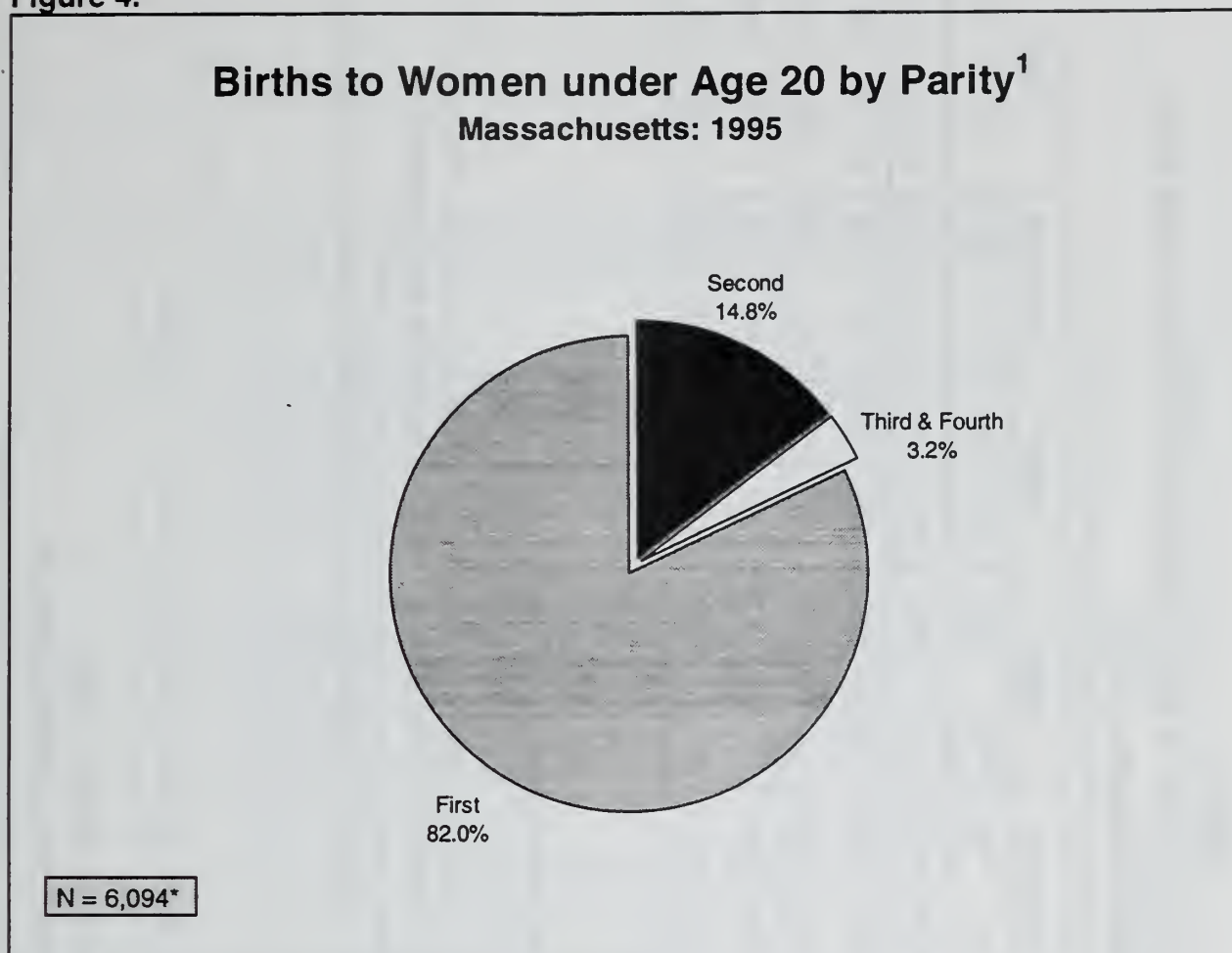
2 Rest of world.

3 Percentages are based on row totals within each age category.

- Over 16% of teen mothers were born outside the fifty states in the United States; 8.5% of adult (20 years and older) mothers were born outside the U.S.
- Maternal birthplace varied by race/Hispanic ethnicity and maternal age; 100% of African-American teen mothers and 99.6% of African-American adult mothers were born in the U.S., while nearly 94% of Vietnamese teen mothers and 97.5% of Vietnamese adult mothers were born outside the U.S.
- Hispanics were the racial/ethnic group whose birth mothers were the most evenly divided between U.S. and foreign birthplace; 46.5% of Hispanic teen mothers and 50.9% of Hispanic adult mothers were born outside the U.S.
- Among teen mothers, Asians had the highest percentage of birth mothers born outside the U.S. (58.3%), while among adult mothers Hispanics had the highest percentage born outside the U.S. (50.9%).



Figure 4.



Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Percentages are based on births with known parity.

<sup>1</sup> Parity is defined as number of live births including this birth. The vast majority of second live birth deliveries were singletons (96.5%); 3.5% of second live birth deliveries were due to twin or higher order multiple births.

- In 1995, 18% of births to teens were to mothers with at least one prior live birth, down slightly from the 1994 figure of 20.3% (data not shown); 3.2% of teen births were to mothers with 2 or more prior live births, down from the 1994 figure of 4.1% (data not shown).



**Table 6.**  
**Births to Multiparous<sup>1</sup> Mothers by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1995**

Unmarried Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>All Ages</b>	35,460	56.3	3,572	61.0	4,826	59.8	1,791	52.1	528	54.3	33	17.0	46,210	56.7
20 +	35,041	58.6	3,392	68.0	4,393	69.2	1,750	53.5	505	60.3	33	17.8	45,114	59.8
< 20	419	13.1	180	20.8	433	25.1	41	25.2	23	17.2	0.0	0.0	1,096	18.0
<b>18-19</b>	368	17.0	133	28.9	308	34.2	28	31.8	20	24.1	0.0	0.0	857	23.1
<b>12-17</b>	51	4.9	47	11.6	125	15.1	13	17.3	3	**	0.0	0.0	239	10.0

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Multiparous is having had at least one previous live birth.

<sup>2</sup> Percentages are based on the total number of births in each race/Hispanic ethnicity-age group (data not shown).

- The percentage of teen mothers ages 18 or 19 who had had at least one previous live birth declined from 26.3% in 1994 to 23.1% in 1995. A similar trend was seen for mothers ages 12 to 17 years (11.2% in 1994 to 10.0% in 1995) (1994 data not shown).
- Among all teen mothers in 1995, Hispanic and Asian women had the highest proportion of multiparous mothers (25.1% and 25.2%, respectively).

**Table 7.**  
**Births by Mother's Race/Hispanic Ethnicity, Age,**  
**and Prenatal Care Payment Source**  
**Massachusetts: 1995**

Mother's Race/Ethnicity	12 to 17 Years		18 to 19 Years		Under 20 Years		20 Years & Over		All Ages	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>Total Births<sup>2</sup></b>	2,397	100.0	3,710	100.0	6,107	100.0	75,455	100.0	81,562	100.0
<b>Public<sup>3</sup></b>	1,594	66.5	2,600	70.1	4,194	68.7	16,262	21.6	20,456	25.1
<b>Private<sup>4</sup></b>	607	25.3	826	22.3	1,433	23.5	53,632	71.1	55,065	67.5
<b>White*</b>	1,040	100.0	2,169	100.0	3,209	100.0	59,820	100.0	63,029	100.0
<b>Public</b>	569	54.7	1,375	63.4	1,944	60.6	8,587	14.4	10,531	16.7
<b>Private</b>	377	36.3	630	29	1,007	31.4	47,050	78.7	48,057	76.2
<b>Black*</b>	404	100.0	461	100.0	865	100.0	4,989	100.0	5,854	100.0
<b>Public</b>	265	65.6	331	71.8	596	68.9	2,384	47.8	2,980	50.9
<b>Private</b>	110	27.2	89	19.3	199	23	2,158	43.3	2,357	40.3
<b>Hispanic</b>	826	100.0	901	100.0	1,727	100.0	6,350	100.0	8,077	100.0
<b>Public</b>	668	80.9	771	85.6	1,439	83.3	3,989	62.8	5,428	67.2
<b>Private</b>	95	11.5	74	8.2	169	9.8	1,882	29.6	2,051	25.4
<b>Asian*</b>	75	100.0	88	100.0	163	100.0	3,273	100.0	3,436	100.0
<b>Public</b>	56	74.7	66	75.0	122	74.8	949	29.0	1,071	31.2
<b>Private</b>	13	17.3	18	20.5	31	19	2,085	63.7	2,116	61.6
<b>Other*</b>	51	100.0	83	100.0	134	100.0	838	100.0	972	100.0
<b>Public</b>	36	70.6	57	68.7	93	69.4	342	40.8	435	44.8
<b>Private</b>	12	23.5	15	18.1	27	20.1	408	48.7	435	44.8

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

<sup>1</sup> Percentages are based on race/Hispanic ethnicity totals. Percentages for Public and Private do not add up to 100.0 because total includes Workers Compensation, self pay, and free care.

<sup>2</sup> Records with unknown mother's race/Hispanic ethnicity are included in Total Births.

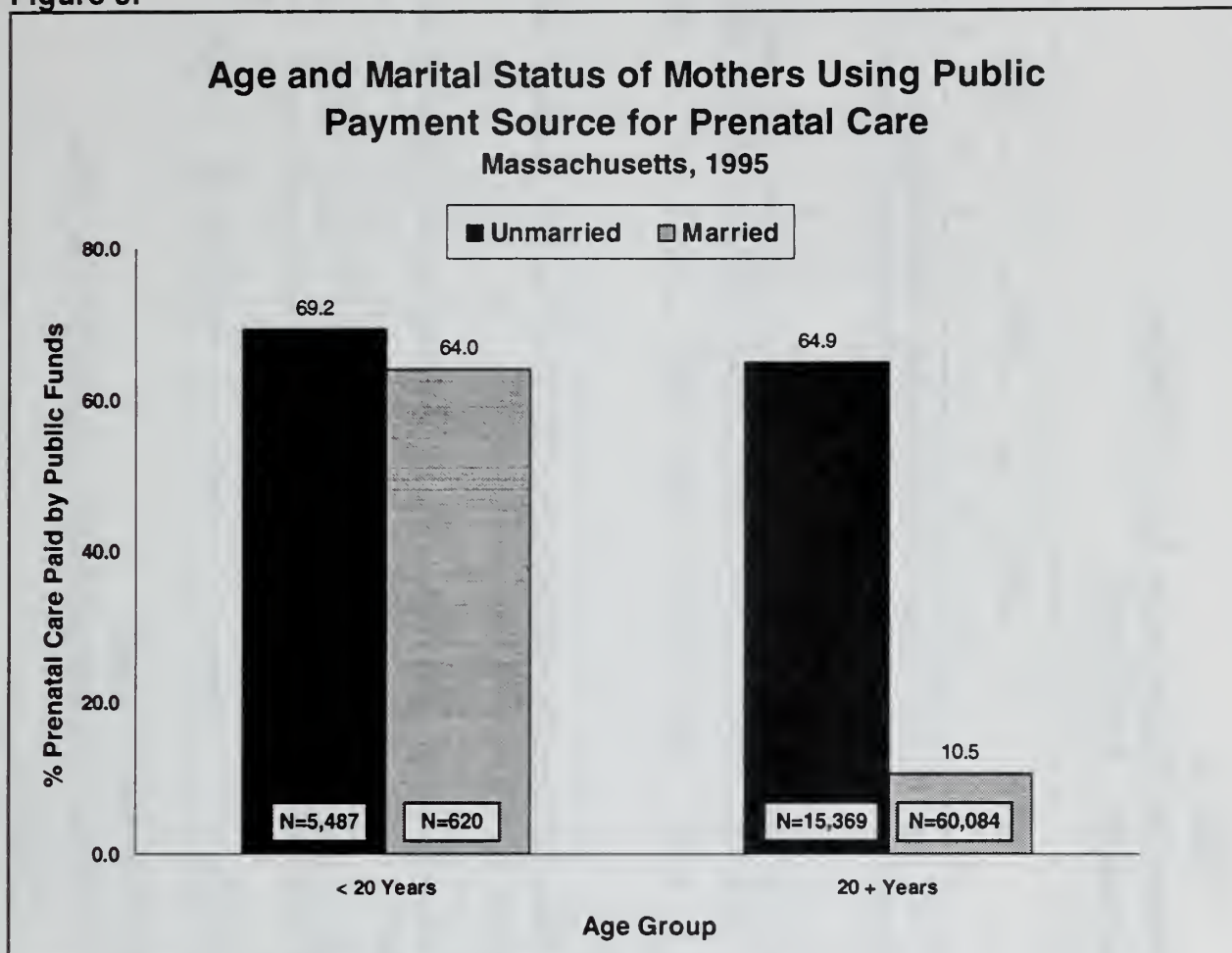
<sup>3</sup> Public: Medicaid, Medicare, Healthy Start and other government programs.

<sup>4</sup> Private: Blue Cross/Blue Shield, other commercial insurance, HMO. HMO may include Medicaid recipients in managed care programs.

- Almost 69% of teen mothers had their prenatal care supported through public funds, compared to nearly 22% of mothers ages 20 and over, a contrast that holds across race/Hispanic ethnicity. The percentage of teens receiving publicly funded prenatal care declined 5.2% from 1994's level (73.9%). The percentage of mothers ages 20 and over receiving publicly funded prenatal care also declined from 23.4% in 1994 to 21.6% in 1995 (1994 data not shown).
- The percentage of teen mothers receiving publicly-funded prenatal care was slightly higher for 18-19 year-olds (70.1%) than for mothers under age 18 (66.5%).
- The percentage of teen mothers receiving publicly-funded prenatal care varied by race/Hispanic ethnicity: 60.6% of white non-Hispanic teen mothers, 68.9% of black non-Hispanic teen mothers, 83.3% of Hispanic teen mothers, and 74.8% of Asian teen mothers received publicly funded prenatal care. All of these percentages declined from their corresponding 1994 values (data not shown).
- There was less variation across race/Hispanic ethnicity groups among teens in the percentage of mothers receiving publicly-funded prenatal care than among women ages 20 and over. Among teens, the difference between the highest and lowest proportions of mothers receiving publicly funded prenatal care (Hispanics and white non-Hispanics, respectively) was 22.7%, while among mothers 20 years and over, the corresponding difference was 48.4%



Figure 5.



Source: Registry of Vital Records and Statistics, MDPH, 1995

- In 1995, 69.2% of *unmarried* teen mothers and 64.0% of *married* teen mothers received publicly funded prenatal care. These figures are slightly lower than the corresponding 1994 data (74.5% and 68.3%, respectively, 1994 data not shown). The contrast is much greater for adult mothers, with 64.9% of unmarried adult mothers receiving publicly funded prenatal care while only 10.5% of married adult mothers received publicly funded prenatal care.

**Table 8.**  
**Trends in Births to Unmarried Mothers by Age of Mother**  
**Massachusetts: 1990-1995**

Unmarried Mother's Age	1990		1991		1992		1993		1994		1995	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>All Ages</b>	22,836	24.7	22,852	25.9	22,612	25.9	22,345	26.4	22,302	26.6	20,857	25.6
<b>20 +</b>	16,687	19.6	16,843	20.8	16,750	20.8	16,462	21.1	16,416	21.3	15,370	20.4
<b>&lt; 20</b>	6,149	83.3	6,009	85.7	5,862	87.8	5,883	89.1	5,886	89.6	5,487	89.9
<b>18-19</b>	3,715	78.2	3,561	81.5	3,462	84.3	3,515	85.5	3,433	86.4	3,210	86.5
<b>12-17</b>	2,433	92.5	2,448	92.6	2,400	93.4	2,368	94.8	2,453	94.6	2,277	95.0

Source: Registry of Vital Records and Statistics, MDPH, 1990-1995.

<sup>1</sup> Percentages are based on total number of births within each category.

- In 1995, the percentage of all Massachusetts births to unmarried women decreased slightly to 25.6% from the 1994 percentage of 26.6%, the highest proportion in recorded history. This was the first decrease in the last 6 years.
- This decrease was not found among teen mothers, for whom the percentage of births to unmarried women rose very slightly (from 89.6% in 1994 to 89.9% in 1995).
- In 1995, 95% of births to mothers ages 12-17 were to unmarried women.



**Table 9.**  
**Births to Unmarried Mothers by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1995**

Unmarried Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>All Ages</b>	11,322	18.0	3,567	60.9	4,805	59.5	681	19.8	432	44.4	50	25.8	20,857	25.6
<b>20+</b>	8,466	14.2	2,729	54.7	3,286	51.8	532	16.3	316	37.7	41	22.2	15,370	20.4
<b>&lt; 20</b>	2,856	89.0	838	96.9	1,519	88.0	149	91.4	116	86.6	9	100.0	5,487	89.9
<b>18-19</b>	1,858	85.7	437	94.8	763	84.7	77	87.5	67	80.7	8	100.0	3,210	86.5
<b>12-17</b>	998	96.0	401	99.3	756	91.5	72	96.0	49	96.1	1	**	2,277	95.0

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

- The overall percentage of births to unmarried mothers varied substantially by race/Hispanic ethnicity in 1995, as it has in previous years. Among births to women of all ages, 18% of white non-Hispanic women were unmarried while 60.9% of black non-Hispanic, 59.5% of Hispanic women and 19.8% of Asian women were unmarried.
- There is less variation in marital status by race/Hispanic ethnicity among teen mothers (< 20 years of age); 89% of white non-Hispanic teen mothers were unmarried while 96.9% of black non-Hispanic, 88% of Hispanic and 91.4% of Asian teen mothers were unmarried.

**Table 10.**  
**Trends in In-Hospital Paternity Acknowledgment<sup>1</sup> by Age of Unmarried Mother**  
**Massachusetts: 1990-1995**

Unmarried Mother's Age	1990		1991		1992		1993		1994		1995	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>All Ages</b>	10,697	46.8	10,708	46.9	10,874	48.1	11,329	50.7	11,904	53.4	12,223	58.6
<b>20+</b>	7,898	47.3	7,992	47.5	8,192	48.9	8,487	51.6	8,944	54.5	9,251	60.2
<b>&lt; 20</b>	2,799	45.5	2,716	45.2	2,682	45.6	2,842	48.3	2,960	50.3	2,972	54.2
<b>18-19</b>	1,764	47.5	1,664	46.7	1,631	47.1	1,812	51.6	1,785	52.0	1,833	57.1
<b>12-17</b>	1,035	42.5	1,052	43.0	1,051	43.8	1,030	43.5	1,175	47.9	1,139	50.0

Source: Registry of Vital Records and Statistics, MDPH, 1995.

<sup>1</sup> Paternity acknowledgment: voluntary self-acknowledgment by fathers or acknowledgment through legal action. This data reflects data collected in hospitals, at time of birth, only (see Glossary for further explanation).

- The overall percentage of births to unmarried women with paternity acknowledgment in the birth hospital continued to increase, from 53.4% in 1994 to 58.6% in 1995. This represents a relative increase since 1990 of over 25%.
- Paternity acknowledgment occurred at a lower rate among unmarried teens than among unmarried adults. However, both groups experienced increases in paternity acknowledgment in 1995. Paternity acknowledgment among births to adults increased from 54.5% in 1994 to 60.2% in 1995, while acknowledgment among teens increased from 50.3% in 1994 to 54.2% in 1995.
- An increase in paternity acknowledgment for infants born to unmarried teens occurred among both young teen mothers (12-17 years old) and older teens (18-19 years old). The percentage of paternity acknowledgment for births to older unmarried teens increased from 52% in 1994 to 57.1% in 1995, while the corresponding percentage among younger unmarried teen women increased from 47.9% in 1994 to 50% in 1995.

**Table 11.**  
**In-Hospital Paternity Acknowledgment<sup>1</sup> by Unmarried Mother's**  
**Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1995**

Unmarried Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>All Ages</b>	7,896	69.7	1,338	37.5	2,492	51.9	231	33.9	235	54.4	31	62.0	12,223	58.6
<b>20+</b>	6,035	71.3	1,088	39.9	1,733	52.7	184	34.6	183	57.9	28	68.3	9,251	60.2
<b>&lt; 20</b>	1,861	65.2	250	29.8	759	50.0	47	31.5	52	44.8	3	**	2,972	54.2
<b>18-19</b>	1,239	66.7	144	33.0	391	51.3	25	32.5	31	46.3	3	**	1,833	57.1
<b>12-17</b>	622	62.3	106	26.4	368	48.7	22	30.6	21	42.9	0.0	0.0	1,139	50.0

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Paternity acknowledgment: voluntary self-acknowledgment by fathers or acknowledgment through legal action. This table reflects data collected in hospitals, at time of birth, only (see Glossary for further explanation).

<sup>2</sup> Percentages are based on the total number of births to unmarried mothers within each category.

- In-hospital paternity acknowledgment varied widely by race/Hispanic ethnicity, ranging from a high of 69.7% among white, non-Hispanic unmarried mothers of all ages to a low of 33.9% among Asian unmarried mothers of all ages. However, paternity acknowledgment increased from 1994 among all race/Hispanic ethnic groups (data not shown).
- The variation in paternity acknowledgment across race/Hispanic ethnicity groups was seen among births to both adult and teen unmarried women. For both age groups, white non-Hispanics had the highest percents, while black non-Hispanics and Asians had the lowest.



**Table 12.**  
**Father's Age by Unmarried Mother's Age When Father Acknowledged Paternity<sup>1</sup>**  
**Massachusetts: 1995**

Mother's Age	Father's Age										Total <sup>3</sup>	
	12-17		18-19		20-24		25-29		30-34		35 and Over	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
20 +	48	0.5	269	2.9	2,534	27.4	2,827	30.6	1,933	20.9	1,635	17.7
< 20	414	13.9	818	27.5	1,359	45.7	273	9.2	80	2.7	27	0.9
< 18	290	25.5	374	32.8	391	34.3	55	4.8	21	1.8	7	0.6
18-19	124	6.8	444	24.2	968	52.8	218	11.9	59	3.2	20	1.1
16-17	205	21.6	324	34.1	853	37.1	46	4.8	16	1.7	6	0.6
12-15	85	45.2	50	26.6	38	20.2	9	4.8	5	2.7	1	**

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Paternity acknowledgment: voluntary self-acknowledgment by fathers or acknowledgment through legal action. This table reflects data collected in hospitals, at time of birth, only (see Glossary for further explanation).

<sup>2</sup> Percentages are based on the total number of fathers whose ages were identified by unmarried mothers within each category.

<sup>3</sup> The Ns may not add up to the Total because the unknown values were excluded from the table.

- For unmarried women ages 20 and over, about 97% of the named fathers were also 20 and over, the same percentage as 1994 (data not shown). For unmarried teens, 58.5% of the named fathers were 20 and over, a 2.0% increase over 1994.
- Among unmarried teen mothers ages 16-17, 44.3% of the fathers named were 20 and over, an increase from 1994 of 2.8%, while for 12-15 year old unmarried mothers, 28.2% of named fathers were 20 and over, an increase from 1994 of 5.5% (1994 data not shown).

*II.*

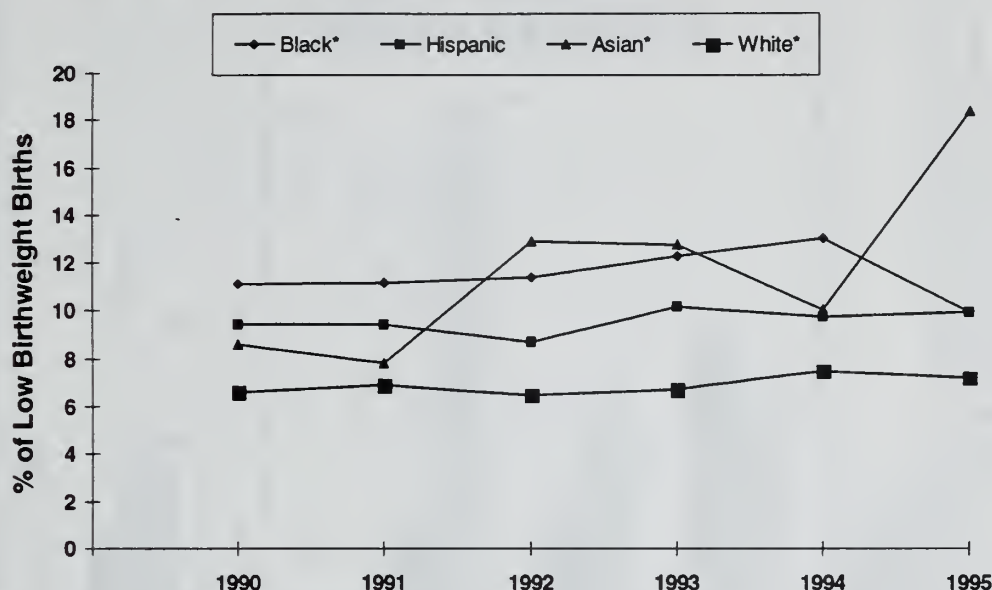
*Birth Outcomes and  
Prenatal Care*





Figure 6.

### Trends in Percent of Low Birthweight<sup>1</sup> Births to Women under Age 20 by Race/Hispanic Ethnicity Massachusetts: 1990-1995



	1990	1991	1992	1993	1994	1995
Black*	11.1	11.2	11.4	12.3	13.1	10.0
Hispanic	9.4	9.4	8.7	10.2	9.8	10.0
Asian*	8.6	7.8	12.9	12.8	10.1	18.4
White*	6.6	6.9	6.5	6.7	7.5	7.2

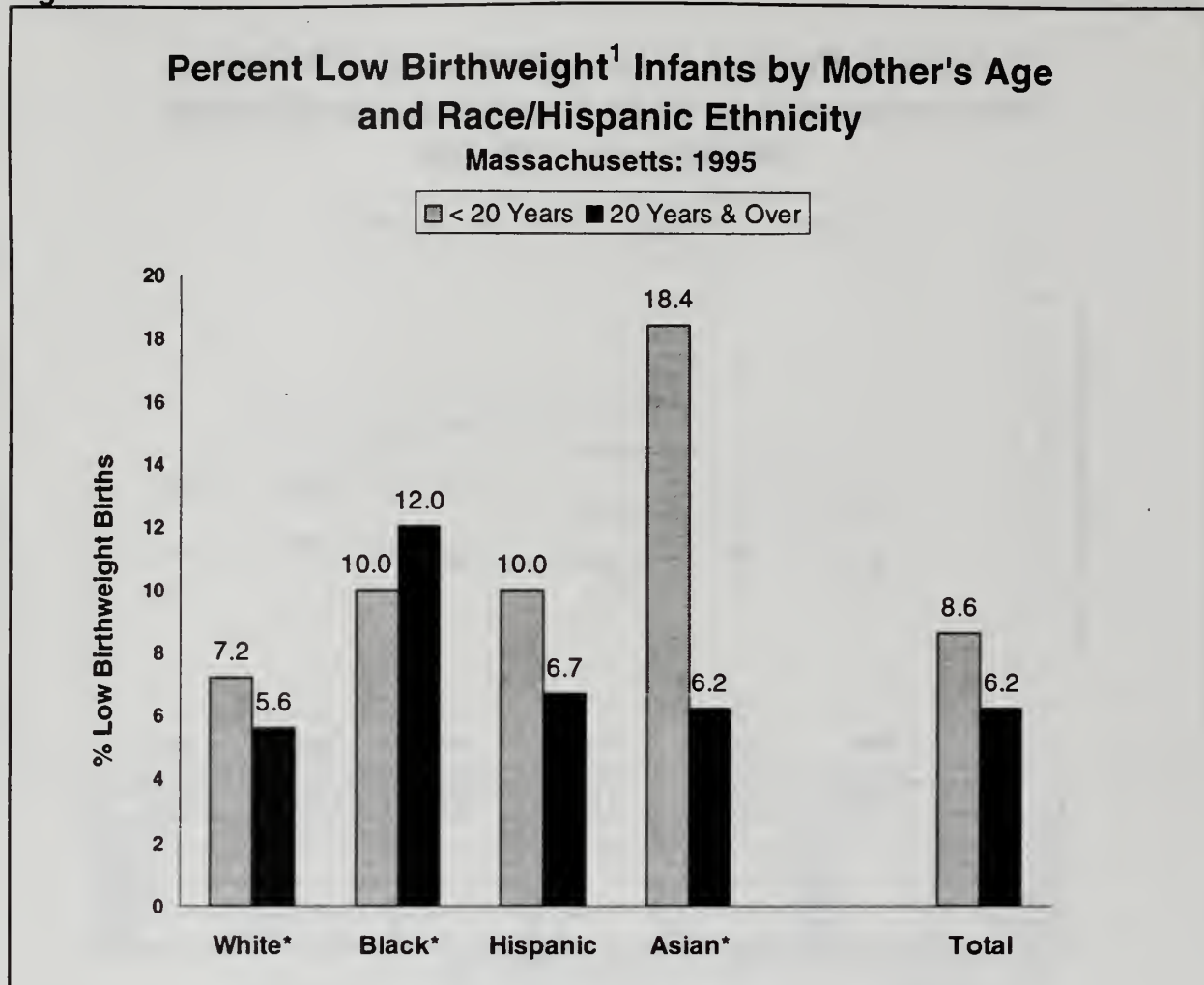
Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

- The occurrence of low birthweight (LBW) among teen births (ages 12-19) continues to differ across race/Hispanic ethnicity groups, with white non-Hispanic teens generally having the lowest percentages of LBW. This same pattern is seen among births to older women (ages 20 and older) (see Figure 7).
- The percentage of LBW infants born to white non-Hispanic and Hispanic teen mothers changed little between 1994 and 1995 (7.5% and 9.8% in 1994 to 7.2% and 10.0% in 1995, respectively).
- In 1995, the percentage of LBW births to black non-Hispanic teens decreased for the first time since 1990 (from 13.1% in 1994 to 10.0% in 1995).
- *Because the number of LBW births was small among Asian teen mothers in 1994 and 1995 (19 and 30, respectively), their LBW percentages fluctuated widely between the two years. The percentage of LBW birthweight births to Asian teen mothers increased from 10.1% in 1994 to 18.4% in 1995, a difference of 11 births.*

Figure 7.



Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

- Overall, low birthweight among teen births is almost 40% higher than it is for adult women (8.6% vs. 6.2%). This ratio varies by race/Hispanic ethnicity. Black teens had the unusual outcome of having a lower percentage of low birthweight births than their adult counterparts (10% vs. 12%). While low birthweight among white non-Hispanic teens was only 28.6% higher than for adult white non-Hispanic women, Asian teens had almost 3 times the low birthweight percentage of adult Asian women.

**Table 13.**  
**Low Birthweight<sup>1</sup> Births by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1995**

Mother's Age	Total		White*		Black*		Hispanic		Asian*		Other		Unknown	
	LBW	N % <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
All Ages	5,174	6.4	3,579	5.7	684	11.7	597	7.4	232	6.8	66	6.8	16	14.5
20 +	4,647	6.2	3,348	5.6	598	12.0	425	6.7	203	6.2	58	6.9	16	14.8
< 20	527	8.6	231	7.2	86	10.0	172	10.0	30	18.4	8	6.0	0	0.0
18-19	294	7.9	147	6.8	41	8.9	92	10.2	10	11.4	4	**	0	0.0
<18	233	9.7	84	8.1	45	11.1	80	9.7	20	26.7	4	**	0	0.0
15-17	218	9.6	80	8.0	42	11.2	75	9.6	18	26.1	3	6.3	0	0.0
12-14	15	12.8	4	**	3	**	5	11.1	2	**	1	**	0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Percentages are based on the number of total births in each category.

- Low birthweight increased with younger maternal age, with the highest low birthweight percentage occurring to the infants of women ages 12-14 (12.8%), over twice that of adults (ages 20 and older).
- Low birthweight also varied by race/Hispanic ethnicity, with black non-Hispanic infants, at 11.7%, over twice as high as white non-Hispanic infants (5.7%). This variation is also found among teens, but the greatest contrast there is between Asian teens, with 18.4% low birthweight infants, and white non-Hispanic teens, with 7.2% low birthweight infants.



**Table 14.**  
**Low Birthweight<sup>1</sup> Among Teen Births**  
**by Level of Prenatal Care and Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 1995**

Mother's Race/ Ethnicity	Level of Prenatal Care <sup>2</sup>									
	Adequate			Intermediate			Late/None			
	Births	Low Birthweight		Births	Low Birthweight		Births	Low Birthweight		
	N <sup>3</sup>	N	%	N <sup>3</sup>	N	%	N <sup>3</sup>	N	%	
< 20 Years	4,035	319	7.9	1,634	160	9.8	396	43	10.9	
White*	2,210	140	6.3	796	65	8.2	187	22	11.8	
Black*	554	50	9.0	247	29	11.7	60	6	10.0	
Hispanic	1,087	109	10.0	506	52	10.3	121	11	9.1	
Asian*	93	16	17.2	55	12	21.8	15	2	**	
Other*	89	4	**	30	2	**	13	2	**	
Unknown	2	0	0.0	0	0	0.0	0	0	0.0	

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Adequacy of Prenatal Care is determined from an index which combines trimester of prenatal care registration with the number of prenatal care visits. The index is adjusted for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. Intermediate care requires second trimester registration and at least five prenatal visits. See Glossary for further explanation.

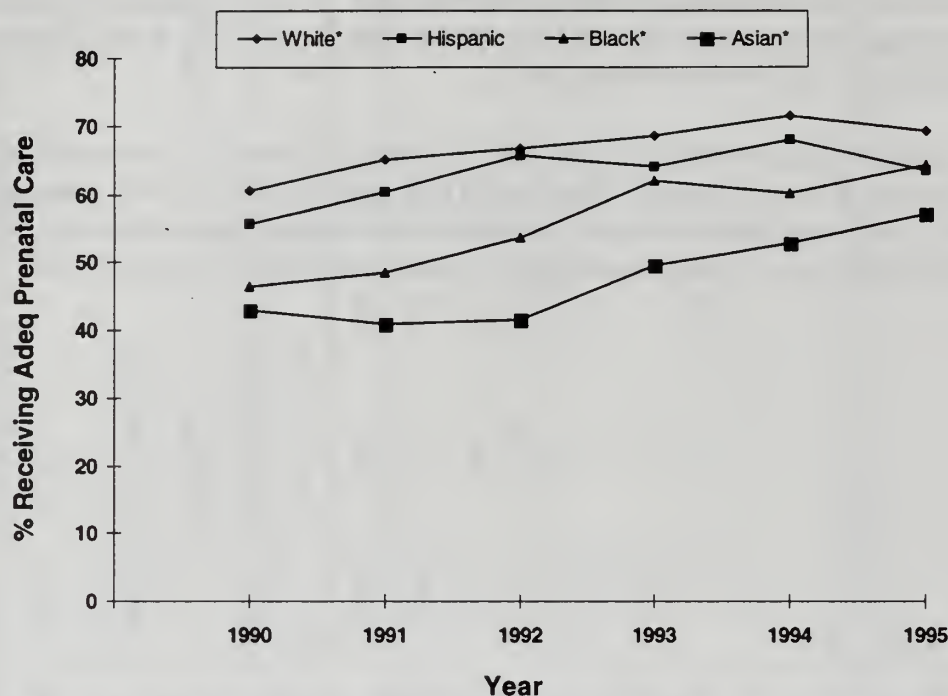
<sup>3</sup> Births with unknown birthweight and adequacy of prenatal care were excluded.



- Among births to teens (< 20 years of age), prenatal care is inversely associated with percent low birthweight. Those teens with adequate prenatal care had 7.9% low birthweight births, compared with 10.9% among those with late or no prenatal care. This relationship is less consistent when examined by race/Hispanic ethnicity. Among black non-Hispanic women, 9% of those with adequate level of prenatal care had low birthweight births, while 10% of births with late or no prenatal care were low birthweight. Among Hispanic teen births; 10% of those with adequate prenatal care had low birthweight births, while 9.1% of those with late or no prenatal care had low birthweight births.
- There is variation in the incidence of low birthweight among race/Hispanic ethnic groups, independent of the level of prenatal care. Asian teen women with adequate prenatal care had 2.7 times as many low birthweight births as white non-Hispanic teens with adequate prenatal care, a ratio which also held for the category of intermediate level of prenatal care.

Figure 8.

### Trends in Percent of Women under Age 20 Receiving Adequate Prenatal Care<sup>1</sup> by Race/Hispanic Ethnicity Massachusetts: 1990-1995



	1990	1991	1992	1993	1994	1995
White*	60.6	65.0	66.7	68.5	71.3	69.2
Hispanic	55.5	60.4	65.7	63.9	68.0	63.4
Black*	46.4	48.4	53.5	61.9	60.1	64.3
Asian*	42.9	40.9	41.5	49.4	52.7	57.1

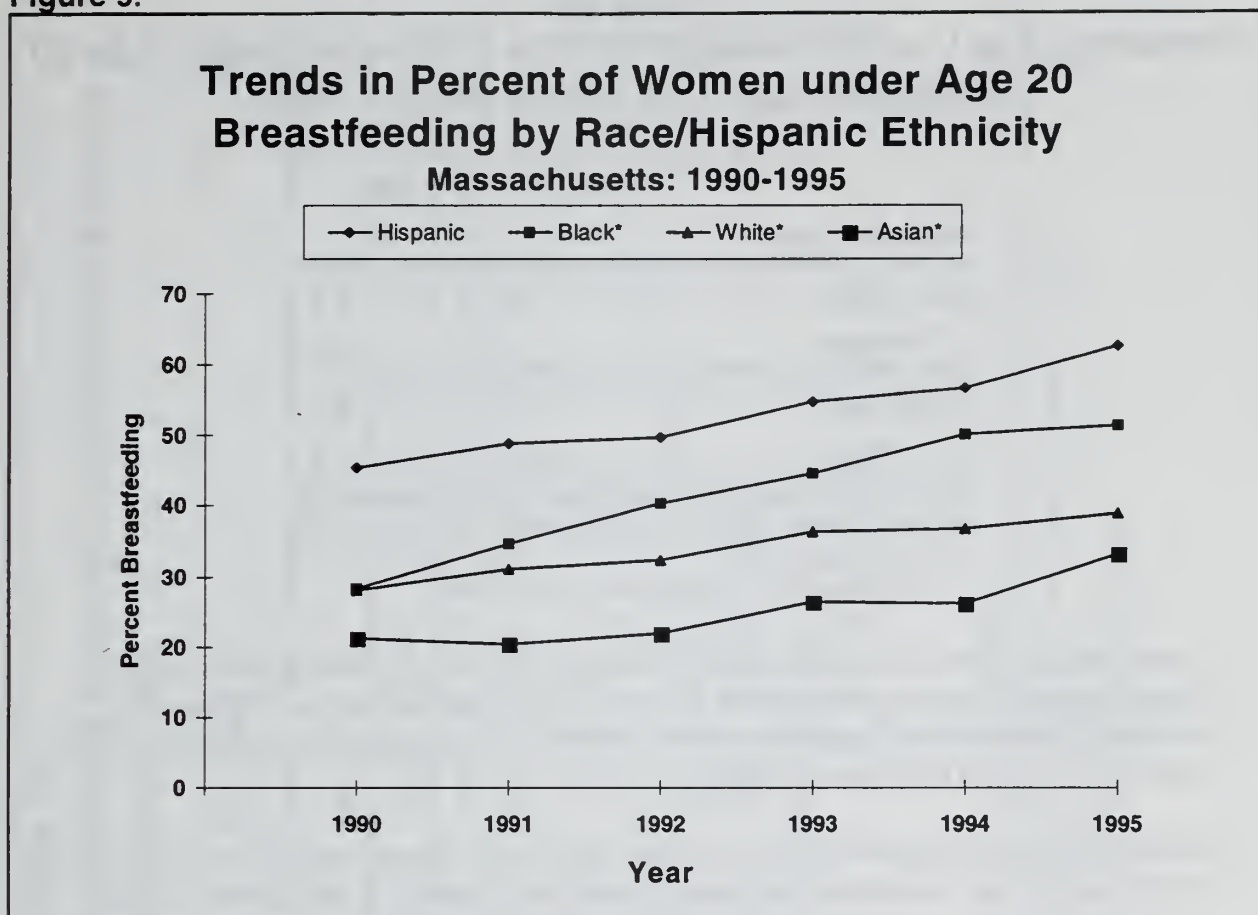
Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

<sup>1</sup> Adequacy of Prenatal Care is determined from an index that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. See Glossary for further explanation.

- While Asian teen mothers continue to receive adequate prenatal care at lower percentages than all of the other race/Hispanic ethnicity groups, their percentages have increased steadily since 1992. The percentage increased from 41.5% in 1992 to 57.1% in 1995.
- Among the other race/Hispanic ethnicity groups, the percentage of teen mothers that received adequate prenatal care increased between 1994 and 1995 for black non-Hispanic mothers (60.1% to 64.3%) but declined among Hispanic and white non-Hispanic mothers (from 68.0% and 71.3% to 63.4% and 69.2%, respectively).

Figure 9.



	1990	1991	1992	1993	1994	1995
Hispanic	45.3	48.7	49.6	54.8	56.6	62.5
Black*	28.2	34.6	40.2	44.6	50.1	51.3
White*	28.0	31.0	32.2	36.3	36.8	38.8
Asian*	21.2	20.3	21.9	26.4	26.1	33.1

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

<sup>1</sup> Mother was breastfeeding or intending to breastfeed at time the birth certificate was completed.

- The percentage of teen mothers reporting breastfeeding or an intention to breastfeed increased between 1994 and 1995 for all race/Hispanic ethnicity groups, with the largest increase among Asians, from 26.1% to 33.1%.
- Asian teen mothers consistently reported the lowest percentages of breastfeeding or intention to breastfeed, while Hispanic teen mothers reported the highest percentages.

**Table 15.**  
**Percentage of Low Birthweight<sup>1</sup> Births to Women Under Age 20**  
**Massachusetts and United States: 1995**

<b>Mother's Age</b>	<b>U. S. %</b>	<b>MA %</b>
<b>20+ Years</b>	7.0	6.2
<b>&lt; 20 Years</b>	9.4	8.6
<b>15-19 Years</b>	9.3	8.5
<b>&lt; 15 Years</b>	13.5	12.8

Source: Massachusetts data from Registry of Vital Records and Statistics, MDPH, 1995. U.S. data from the National Center for Health Statistics, 1995.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

- The percentage of low birthweight births to teens (< 20 years of age) was lower in Massachusetts than in the nation (8.6% vs. 9.4%). While the national low birthweight percentage remained unchanged from 1994 to 1995, the Massachusetts percentage declined from 9.1% to 8.6% (1994 data not shown).
- Broken out by age, the percentage of low birthweight births among young teen mothers (less than 15 years of age) was lower for Massachusetts than for the U.S. as a whole (12.8% vs. 13.5%, respectively). The percentage of low birthweight births among teen mothers ages 15-19 (8.5%) was also lower than the corresponding national figure of 9.3%.



**Table 16.**  
**Prenatal and Birth Characteristics By Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1995**

Mother's Race/Ethnicity	Birthweight <sup>1</sup>		Prenatal Care				C-Section		Breastfeeding <sup>3</sup>	
	Very Low		Low		Adequate Care <sup>2</sup>		First Trimester			
	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>
<b>All Ages</b>	965	1.2	5,175	6.4	68,197	84.2	72,567	89.3	16,758	20.6
<b>20 + Years</b>	879	1.2	4,648	6.2	64,162	85.6	68,146	90.6	16,013	21.3
<b>&lt; 20 Years</b>	86	1.4	527	8.6	4,035	66.5	4,421	72.7	745	12.3
<b>White*</b>	29	0.9	231	7.2	2,210	69.2	2,374	74.3	403	12.6
<b>Black*</b>	16	1.9	86	10	554	64.3	615	71.3	117	13.6
<b>Hispanic</b>	37	2.1	172	10.0	1,087	63.4	1,231	71.6	194	11.3
<b>Asian*</b>	3	**	30	18.4	93	57.1	100	61.3	16	9.8
<b>Other*</b>	1	**	8	6.0	89	67.4	99	74.4	15	11.3
<b>Unknown</b>	0	0.0	0	0.0	2	**	2	**	0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Very low birthweight: < 1,500 grams or 3.3 pounds. Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Adequacy of Prenatal Care is determined from an index that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. Adequate care requires first trimester registration and at least 9 prenatal visits. See Glossary for further explanation.

<sup>3</sup> Mother was breastfeeding or intending to breastfeed at time the birth certificate was completed.

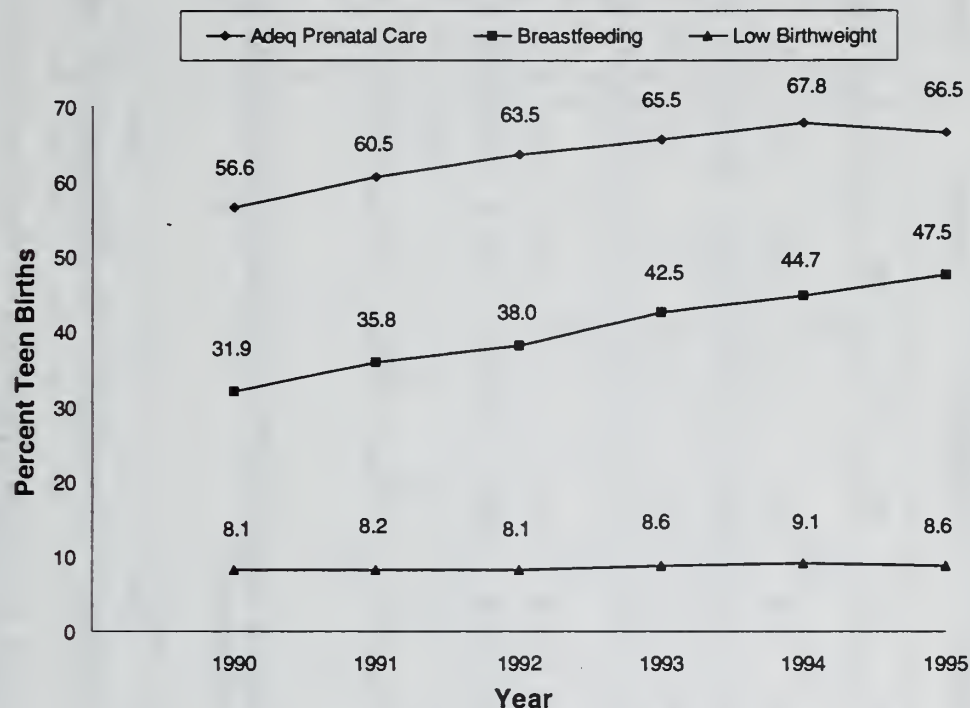
<sup>4</sup> Includes only cases where birthweight, prenatal care, cesarean section or breastfeeding information is known.



- Among teens (< 20 years of age), Hispanics had the highest percentage of very low birthweight births (2.1%), while white non-Hispanics had the lowest percentage (0.9%).
- More adult women received adequate prenatal care compared to teen women (85.6% vs. 66.5%). Among teen racial/Hispanic ethnic groups, Asian women had the lowest percentage of adequate prenatal care (57.1%); the next lowest group was Hispanics, with 63.4%.
- Nearly 73% of teen mothers registered for prenatal care in the first trimester of pregnancy, the same percentage as in 1994 (data not shown).
- The overall percentage of births delivered by cesarean section was virtually the same as in 1994 (20.6% in 1995, 20.7% in 1994). The percentage of teens with cesarean deliveries remained unchanged from 1994, at 12.3% (1994 data not shown).
- While about two-thirds of adult mothers were breastfeeding or intending to breastfeed their infants in 1995, under half (47.5%) of teen mothers were breastfeeding or intending to breastfeed.

Figure 10.

**Percent of Low-Birthweight Births, Adequate Prenatal Care and Breastfeeding among Mothers under Age 20  
Massachusetts: 1990-1995**



Source: Registry of Vital Records and Statistics, MDPH, 1995.

- The percentage of adequate prenatal care among teen births overall showed a slight decline from the previous year (67.8% in 1994 to 66.5% in 1995).
- Each year, teen mothers are reporting higher percentages of breastfeeding or intention to breastfeed.
- The percentage of low birthweight among teen births continues to show little change over time.

**Table 17.**  
**Births by Gestational Age, Mother's Age, and Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 1995**

Mother's Age and Gestational Age <sup>1</sup> (weeks completed)	Total		White*		Black*		Hispanic		Asian*		Other*		Unknown	
	N	% <sup>2</sup>	N	%	N	%	N	%	N	%	N	%	N	%
<b>20 Years and Over</b>														
< 37 weeks	5,857	7.8	4,296	7.2	695	13.9	534	8.4	250	7.6	64	7.6	18	9.7
37-41 weeks	65,725	87.1	52,508	87.8	4,053	81.2	5,452	85.9	2,895	88.5	731	87.2	86	46.5
42 + <sup>3</sup> weeks	3,529	4.7	2,813	4.7	222	4.4	331	5.2	122	3.7	39	4.7	2	**
Unknown	344	0.5	203	0.3	19	0.4	33	0.5	6	0.2	4	**	79	42.7
<b>Less than 20 Years</b>														
< 37 weeks	581	9.5	258	8.0	100	11.6	192	11.1	23	14.1	8	6.0	0	0.0
37-41 weeks	5,112	83.7	2,722	84.8	716	82.8	1,425	82.5	132	81.0	116	86.6	1	**
42 + <sup>3</sup> weeks	377	6.2	217	6.8	43	5.0	100	5.8	8	4.9	9	6.7	0	0.0
Unknown	37	0.6	12	0.4	6	0.7	10	0.6	0	0.0	1	**	8	88.9

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded

<sup>1</sup> Clinical estimate of the number of weeks of pregnancy completed as estimated by the attendant at birth or the postnatal physician. Normal gestational age is defined as delivery between the completion of the 37th and the 41st week of pregnancy.

<sup>2</sup> Percentages are based on column totals.

<sup>3</sup> The majority (334 out of 417) of this group completed no more than 42 weeks gestation.

- The incidence of prematurity was about 22% greater in teen births than in births to adult mothers (9.5% and 7.8%, respectively).
- Among adult women, prematurity was highest among births to black non-Hispanic mothers (13.9%) and lowest among births to white non-Hispanic mothers (7.2%). Among teen mothers, prematurity was highest among Asians (14.1%), and lowest among white non-Hispanics (8.0%).

**Table 18.**  
**Trends in Infant Mortality Rates<sup>1</sup> by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1989-1994<sup>2</sup>**

Mother's Age	White*		Black*		Hispanic		Asian*		Other/Unk		Total	
	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate
1989												
<20	60	13.0	18	15.8	14	8.8	1	**	2	**	95	12.3
20+	426	6.3	112	20.1	56	9.1	13	4.3	17	17.9	624	7.5
1990												
<20	31	7.4	17	15.2	14	8.2	1	**	1	**	64	8.7
20+	396	5.8	83	13.7	54	8.1	20	6.3	12	13.4	565	6.6
1991												
<20	38	9.9	14	13.2	20	11.3	1	**	2	**	75	10.7
20+	342	5.3	77	13.6	48	7.2	17	5.5	8	8.6	492	6.1
1992												
<20	32	9.0	20	18.9	19	11.0	0	0.0	2	**	73	11.0
20+	343	5.4	89	15.9	41	6.1	18	5.8	16	16.0	507	6.3
1993												
<20	25	7.2	14	14.0	23	12.7	2	**	0	0.0	64	9.7
20+	318	5.1	68	12.6	47	7.3	10	3.2	11	11.1	454	5.8
1994												
<20	33	10.0	8	8.0	20	10.3	1	**	2	**	64	9.7
20+	293	4.8	73	13.9	37	5.7	14	4.4	15	15.2	432	5.6

Source: Registry of Vital Records and Statistics, MDPH: 1989-1994.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

<sup>2</sup> 1994 is the last year data was available for this analysis. See Technical Notes for further explanation.

<sup>3</sup> N refers to the number of deaths occurring in that year.

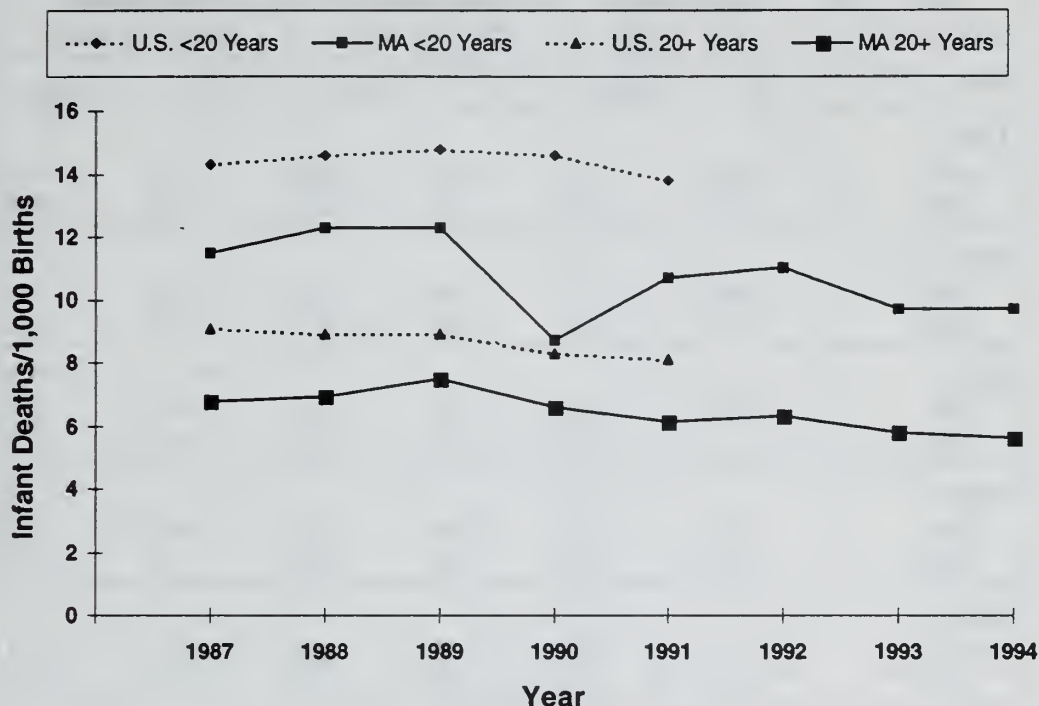


- Between 1989 and 1994, infant mortality declined 25.3% among the infants of adult women and 21.1% among the infants of teen mothers.
- Within race/Hispanic ethnicity groups, infants to teen mothers had consistently higher infant mortality rates than infants to adult mothers. The exceptions were black non-Hispanics, for whom infant mortality among births to adult mothers exceeded that among teen mothers for 3 of the 6 years shown, and Hispanics, for whom the same relationship was found in 1989.



Figure 11.

### Trends in Infant Mortality Rates<sup>1</sup> by Mother's Age Massachusetts: 1987-1994 and United States: 1987-1991



	1987	1988	1989	1990	1991	1992	1993	1994
U.S. <20 Years	14.3	14.6	14.8	14.6	13.8	N/A	N/A	N/A
MA <20 Years	11.5	12.3	12.3	8.7	10.7	11.0	9.7	9.7
U.S. 20+ Years	9.1	8.9	8.9	8.3	8.1	N/A	N/A	N/A
MA 20+ Years	6.8	6.9	7.5	6.6	6.1	6.3	5.8	5.6

Source: Registry of Vital Records and Statistics, MDPH, 1987-1994; National Center for Health Statistics, 1987-1991. U.S. data not available for subsequent years.

<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

- From 1987 to 1991, the teen infant mortality rate (infant deaths per 1,000 live births) declined 3.5% nationally (from 14.3 to 13.8), and 7% among Massachusetts teens.
- In contrast, infant mortality among adult mothers declined 11% from 1987 to 1991 nationally, while the IMR among Massachusetts adult mothers declined 10.3%.
- From 1993 to 1994, the infant mortality rate among Massachusetts teen mothers was unchanged at 9.7 deaths per 1,000 live births, while the IMR among adult women declined very slightly, from 5.8 to 5.6.

**Table 19.**  
**Trends in Neonatal and Post-Neonatal Mortality Rates<sup>1</sup>**  
**by Mother's Age**  
**Massachusetts: 1989-1994<sup>2</sup>**

Mother's Age	Neonatal (<28 days)		Post-neonatal (28-364 days)		Total Infant Mortality Rate	
	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate
<b>1989</b>						
20+	435	5.2	189	2.3	624	7.5
<20	61	7.9	34	4.4	95	12.3
<b>1990</b>						
20+	400	4.7	165	1.9	656	6.6
<20	45	6.1	19	2.6	64	8.7
<b>1991</b>						
20+	350	4.3	142	1.8	492	6.1
<20	51	7.3	24	3.4	75	10.7
<b>1992</b>						
20+	372	4.6	130	1.6	502	6.2
<20	52	7.8	21	3.2	73	11.0
<b>1993</b>						
20+	331	4.2	123	1.6	454	5.8
<20	44	6.7	20	3.0	64	9.7
<b>1994</b>						
20+	309	4.0	122	1.6	431	5.6
<20	47	7.2	17	2.6	64	9.7

Source: Registry of Vital Records and Statistics, MDPH: 1989-1994.

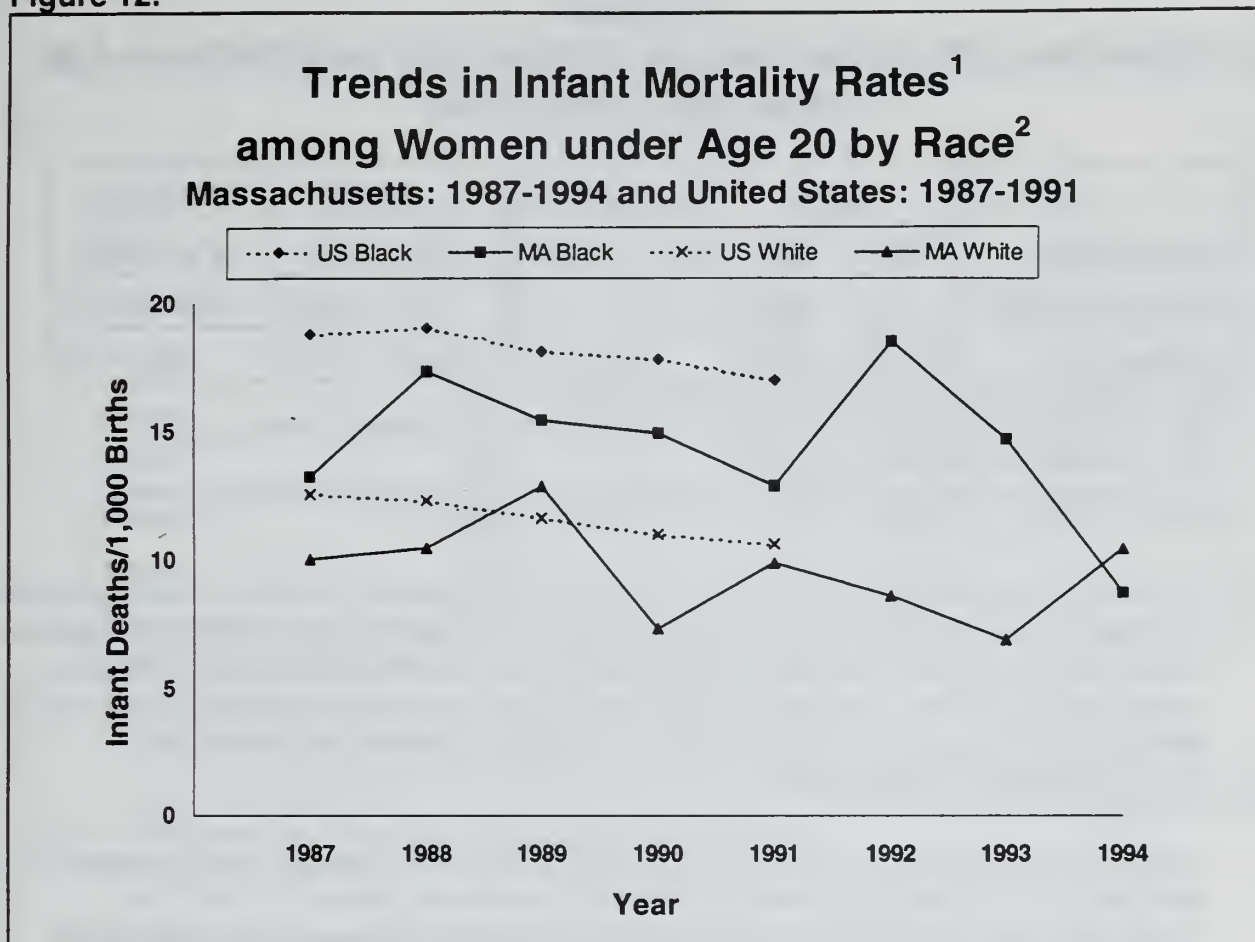
<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

<sup>2</sup> 1994 is the latest year data was available for this analysis. See Technical Notes for further explanation.

<sup>3</sup> N refers to the number of deaths occurring in that year.

- The ratio of infant mortality rates between births to teen mothers and births to adult mothers has widened over time. In 1989, the teen IMR was 64% higher than the adult IMR; in 1994, the teen IMR was 73% higher than the adult IMR.
- Regardless of mother's age, the IMR was consistently higher during the neonatal period than in the post-neonatal period.
- While neonatal mortality declined over time among births to both teen and adult mothers, the decline was larger for adults (23%) than for teens (9%).
- Conversely, the decline in postneonatal mortality over time was greater among births to teens (41%) than among births to adults (30%).

Figure 12.



	1987	1988	1989	1990	1991	1992	1993	1994
US Black	18.8	19.0	18.1	17.8	17.0	N/A	N/A	N/A
MA Black	13.2	17.3	15.4	14.9	12.9	18.5	14.7	8.7
US White	12.5	12.3	11.6	11.0	10.6	N/A	N/A	N/A
MA White	10.0	10.4	12.8	7.3	9.9	8.6	6.9	10.4

Source: Massachusetts data from Registry of Vital Records and Statistics, MDPH: 1987-1994. U.S. data from the National Center for Health Statistics, 1987-1991.

<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

<sup>2</sup> The white and black race categories include Hispanics.

- For the 5 year period 1987-1991, infant mortality among teen mothers at the national level exceeded that of Massachusetts teen mothers for both blacks and whites (with an exception in 1989 when infant mortality among whites in Massachusetts exceeded that of the U.S.).
- Infant mortality among Massachusetts black teens peaked in 1992 at 18.5 deaths per 1000 live births, declining to 8.7 by 1994.
- Unlike the previous 7 years, in 1994, the Massachusetts infant mortality rate among white teen mothers exceeded that of black teens (10.0 and 8.7, respectively).



**Table 20.**  
**Infant Mortality Rates<sup>1</sup> by Low Birthweight<sup>2</sup> and Mother's Age**  
**Massachusetts: 1994<sup>3</sup>**

Mother's Age	<1500g		1500-2499g		<2500g		2500+g	
	N <sup>4</sup>	IMR	N <sup>4</sup>	IMR	N <sup>4</sup>	IMR	N <sup>4</sup>	IMR
<b>20 Years and Over</b>	231	268.0	54	13.9	285	60.2	147	2.0
<b>&lt; 20 Years</b>	33	287.0	6	12.4	39	65.0	25	4.2

Source: Registry of Vital Records and Statistics, MDPH: 1994.

<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

<sup>2</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>3</sup> 1994 is the latest year data was available for this analysis. See Technical Notes for further explanation.

<sup>4</sup> N refers to the number of deaths occurring in that year and age category.

- The risk of infant mortality increased as birthweight declined, and this effect was independent of maternal age. The infant mortality rate among very low birthweight infants (<1500 grams) was 23 times greater than the IMR among moderately low birthweight infants (1500-2499 grams) of teen mothers. Similarly, the IMR among very low birthweight infants born to adult women (20 years and older) was 19 times greater than the IMR for moderately low birthweight infants among adults.
- Teen infant mortality rates exceeded those for adults in each birthweight category except for moderately low birthweight, where the adult IMR was slightly higher (13.9 vs. 12.4). However, the degree of difference is markedly less than the differences across birthweight categories.
- The infant mortality rate among normal birthweight infants was more than twice as high among teen mothers than among adult mothers (4.2 vs. 2.0).

**Table 21.**  
**Maternal Smoking<sup>1,2</sup> by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1995**

Mother's Race/Ethnicity	< 20 Years			20+ Years		
	Births N <sup>3</sup>	Smokers		Births N <sup>3</sup>	Smokers	
		N	%		N	%
<b>Total</b>	6,105	1,313	21.5	75,259	9,689	12.9
<b>White*</b>	3,208	1,026	32.0	59,721	8,420	14.1
<b>Black*</b>	865	101	11.7	4,978	599	12.0
<b>Hispanic</b>	1,727	151	8.7	6,344	505	8.0
<b>Asian*</b>	163	0	0.0	3,272	43	1.3
<b>Other/Unknown*</b>	139	35	25.2	944	122	12.9

Source: Registry of Vital Records and Statistics, MDPH: 1995.

\* Non-Hispanic

<sup>1</sup> Any amount of smoking cigarettes by mother during pregnancy.

<sup>2</sup> In 1995, two hospitals reported maternal smoking rates of less than 5%: Brigham and Women's (3.0%) and Newton-Wellesley (4.2%). Maternal smoking is self-reported by mothers, usually following the birth of their child, and as such these data should be interpreted cautiously.

<sup>3</sup> Cases with unknown smoking status were excluded.

- More teen mothers smoked during pregnancy than adult mothers (21.5% vs. 12.9%).
- Among teen mothers, white non-Hispanics had the highest prevalence of smoking, 32.0%, almost 3 times that of the next highest race/Hispanic ethnicity, black non-Hispanics, at 11.7%.
- White non-Hispanics also had the highest smoking prevalence among adult women, but the racial/ethnic variation in smoking prevalence is much smaller among adult mothers than among teen mothers.
- White non-Hispanic teen mothers smoked 2.3 times as often as white non-Hispanic adult mothers. Smoking levels of teens and adults in other racial/ethnic groups were almost identical to one another.



**Table 22.**  
**Low Birthweight by Mother's Age, Smoking<sup>1,2</sup> Status**  
**and Race/Hispanic Ethnicity**  
**Massachusetts: 1995**

Mother's Age	Smokers			Non-Smokers		
	Births N <sup>3</sup>	LBW N	% <sup>4</sup>	Births N <sup>3</sup>	LBW N	% <sup>4</sup>
<b>&lt; 20 Years</b>	1,313	125	9.5	4,789	402	8.4
<b>White*</b>	1,026	80	7.8	2,182	151	6.9
<b>Black*</b>	101	16	15.8	764	70	9.2
<b>Hispanic</b>	151	25	16.7	1,576	147	9.3
<b>Asian*</b>	0	0	0.0	163	30	18.4
<b>Other/Unknown*</b>	35	4	**	104	4	**
<b>20 Years and Over</b>	9,689	960	9.9	65,570	3,662	5.6
<b>White*</b>	8,420	774	9.2	51,301	2,561	5.0
<b>Black*</b>	599	104	17.4	4,379	487	11.1
<b>Hispanic</b>	505	65	12.9	5,839	359	6.2
<b>Asian*</b>	43	1	**	3,229	202	6.3
<b>Other/Unknown*</b>	122	16	13.1	822	53	6.5

Source: Registry of Vital Records and Statistics, MDPH: 1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Any amount of smoking cigarettes by mother during pregnancy.

<sup>2</sup> In 1995, two hospitals reported maternal smoking rates of less than 5%: Brigham and Women's (3.0%) and Newton-Wellesley (4.2%). Maternal smoking is self-reported by mothers, usually following the birth of their child, and as such these data should be interpreted cautiously.

<sup>3</sup> Cases with unknown smoking status were excluded.

<sup>4</sup> Percentage of low birthweight births to smoking or non-smoking mothers.

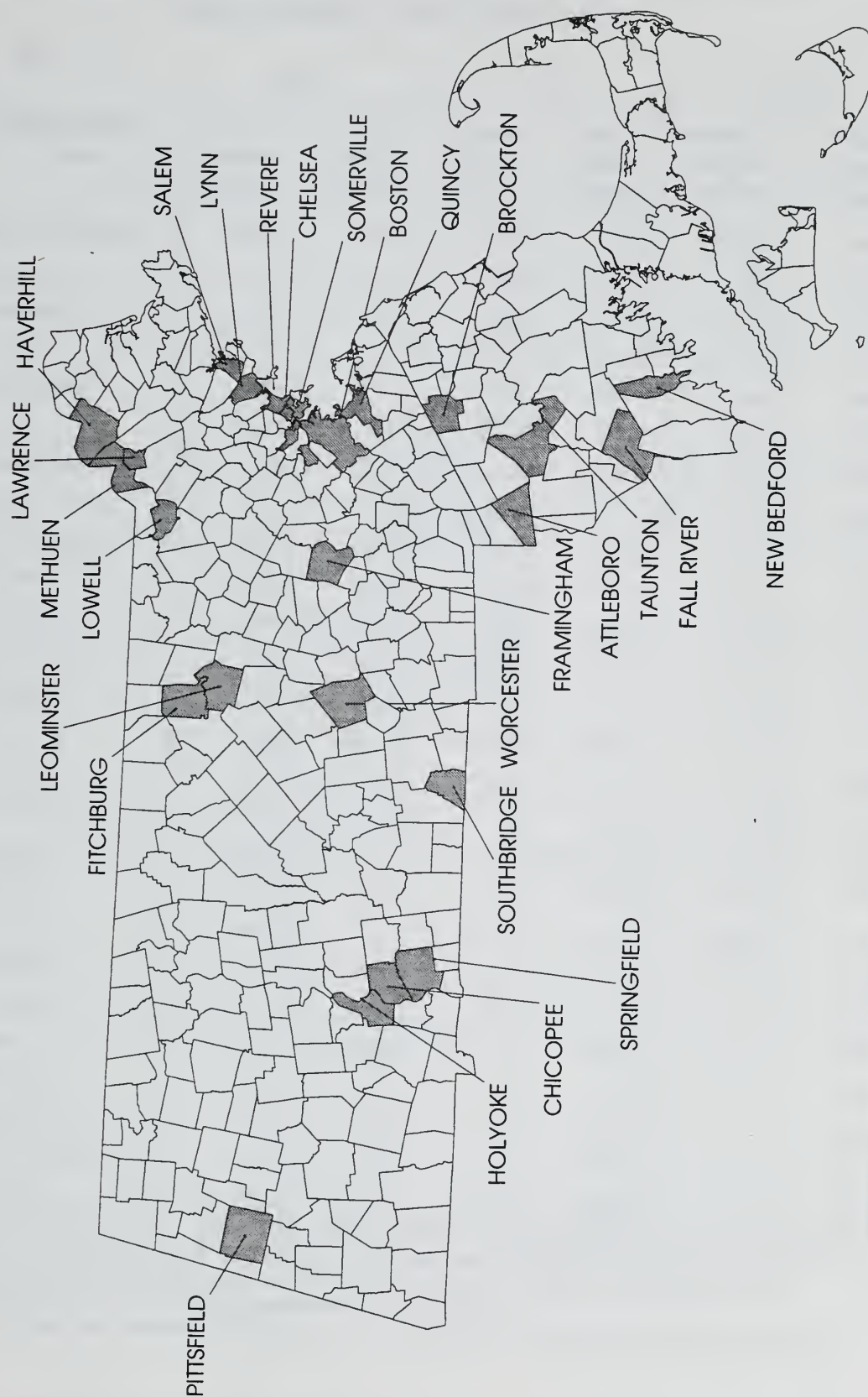
- Low birthweight occurred more frequently among smokers than nonsmokers, for both teen and adult mothers and across race/Hispanic ethnicity groups (except among Asians where there were too few smokers to make a comparison).
- The total percentage of low birthweight births is very similar among smoking mothers regardless of maternal age (9.5% among smoking teens, 9.9% among smoking adults). When broken down by race/Hispanic ethnicity, however, percentages of low birthweight births to adult smokers were greater among white and black non-Hispanic mothers compared to teen smokers of the same race/Hispanic ethnicity, but smaller among adult Hispanic mothers compared to Hispanic teen smokers.
- Among teen smokers, the percentages of low birthweight births to both Hispanic (16.7%) and black non-Hispanic (15.8%) teens were at least 2 times greater than to white teens (7.8%).
- Among non-smokers, 8.4% of teens had low birthweight infants while 5.6% of adults had low birthweight infants.

*III.*

*Birth Characteristics  
for Selected Communities*



**Figure 13.**  
**25 Communities with the Highest Number of Teen Births, 1995**



Source: Registry of Vital Records and Statistics, MDPH  
 Map Produced by OSE, BFCH, MDPH





**Table 23.**  
**Trends in Birth Rates Among Women Ages 15-19**  
**for Selected Communities<sup>1</sup>, Ranked by 1995 Teen Birth Rate<sup>2</sup>**  
**Massachusetts: 1995, 1990, 1985**

1995 Rank	Demographic Area	1995		1990		1985	
		Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate
	<b>Massachusetts</b>	<b>5,990</b>	<b>29.2</b>	<b>7,258</b>	<b>35.1</b>	<b>6,857</b>	<b>28.6</b>
1	Holyoke	170	117.8	203	140.3	182	104.3
2	Lawrence	286	110.6	338	122.8	269	100.6
3	Chelsea	74	86.2	105	114.8	67	67.3
4	Springfield	448	77.2	523	87.9	398	59.8
5	Lowell	298	75.5	309	81.3	254	61.0
6	Southbridge	43	75.0	48	82.5	43	66.8
7	Lynn	175	72.3	194	79.4	170	59.2
8	New Bedford	203	59.8	263	76.3	218	57.6
9	Brockton	183	56.0	216	67.8	240	62.8
10	Worcester	349	54.1	399	58.8	312	42.1
11	Fall River	169	53.3	246	76.9	238	67.9
12	Taunton	85	53.1	95	61.0	76	43.1
13	Fitchburg	93	52.8	146	82.1	100	46.7
14	Haverhill	88	49.9	94	60.4	80	43.3
15	Leominster	60	48.7	42	37.8	62	45.0
16	Pittsfield	68	44.7	74	48.3	69	34.8
17	Revere	44	41.9	45	42.3	24	16.7
18	Boston	880	41.1	1,137	52.7	1,158	46.7
19	Attleboro	47	38.1	53	45.9	57	42.5
20	Methuen	49	36.7	53	41.7	44	30.7
21	Salem	45	36.3	45	35.4	39	25.2
22	Chicopee	59	31.7	84	44.9	59	26.7
23	Somerville	57	28.8	64	29.2	83	29.2
24	Framingham	51	23.0	44	19.6	48	17.4
25	Quincy	44	19.5	51	22.0	57	19.2

Sources: Registry of Vital Records and Statistics, MDPH, 1985, 1990, 1995. The 1990 population data are based on the 1990 Census Massachusetts Age, Race and Sex File (MARS File); the 1995 data are interpolations based on the 1990 Census and the 1995 estimates from the Massachusetts Institute for Social and Economic Research (MISER); and the 1985 data are interpolations based on the 1980 and 1990 censuses and estimates from MISER.

<sup>1</sup> 25 communities with the greatest number of 1995 teen births. <sup>2</sup> Rates are per 1,000 females ages 15-19 in each city/town.

**Table 24.**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1995**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Massachusetts	All Ages	63,029	5,854	8,077	3,436	1,166	81,562 <sup>2</sup>
	< 18	1,040	404	826	75	52	2,397
	< 20	3,209	865	1,727	163	143	6,107
	20 +	59,819	4,989	6,350	3,273	1,022	75,453
Attleboro	All Ages	615	4	25	26	6	676
	< 18	11	0	**	**	0	16
	< 20	36	**	6	5	**	48
	20 +	579	**	19	21	¥	628
Boston	All Ages	2,768	2,861	1,648	586	171	8,034
	< 18	44	213	122	13	4	396
	< 20	137	466	253	27	18	901
	20 +	2,631	2,395	1,395	559	152	7,132
Brockton	All Ages	791	305	135	36	148	1,415
	< 18	22	20	20	**	**	68
	< 20	86	39	42	**	¥	186
	20 +	705	266	93	¥	¥	1,229
Chelsea	All Ages	133	46	343	45	13	580
	< 18	6	0	19	**	**	26
	< 20	13	**	54	**	**	75
	20 +	120	¥	289	¥	10	505
Chicopee	All Ages	551	14	56	6	1	628
	< 18	15	0	6	0	0	21
	< 20	42	**	14	0	**	59
	20 +	509	¥	42	6	**	569
Fall River	All Ages	1,086	23	27	35	8	1,179
	< 18	59	**	**	**	**	70
	< 20	155	6	6	**	**	172
	20 +	931	17	21	¥	¥	1,007

**Table 24. (Continued)**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1995**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
<b>Fitchburg</b>	<b>All Ages</b>	354	23	130	23	3	533
	< 18	10	5	31	**	**	47
	< 20	38	8	46	**	**	95
	20 +	316	15	84	¥	**	438
<b>Framingham</b>	<b>All Ages</b>	666	40	195	37	18	956
	< 18	9	**	11	0	**	21
	< 20	27	**	21	**	**	52
	20 +	639	¥	174	¥	¥	904
<b>Haverhill</b>	<b>All Ages</b>	735	23	86	12	7	863
	< 18	24	**	10	0	**	39
	< 20	62	6	20	0	1	89
	20 +	673	17	66	12	6	774
<b>Holyoke</b>	<b>All Ages</b>	231	18	423	11	**	684
	< 18	8	0	70	0	0	78
	< 20	32	**	137	**	**	174
	20 +	199	¥	286	¥	0	510
<b>Lawrence</b>	<b>All Ages</b>	364	23	856	38	17	1,298
	< 18	19	0	113	**	**	135
	< 20	52	**	238	5	**	300
	20 +	312	¥	618	33	¥	998
<b>Leominster</b>	<b>All Ages</b>	477	17	84	27	7	612
	< 18	8	0	8	**	**	18
	< 20	30	**	25	**	1	61
	20 +	447	¥	59	¥	6	551
<b>Lowell</b>	<b>All Ages</b>	970	62	335	357	15	1,739
	< 18	45	**	55	23	**	129
	< 20	135	6	108	47	5	301
	20 +	835	56	227	310	10	1,438



**Table 24. (Continued)**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1995**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Lynn	All Ages	637	168	338	128	15	1,286
	< 18	18	11	35	13	1	78
	< 20	56	26	77	17	3	179
	20 +	581	142	261	111	12	1,107
Methuen	All Ages	456	5	89	22	5	577
	< 18	9	0	8	**	**	19
	< 20	27	**	19	**	2	50
	20 +	429	**	70	¥	3	527
New Bedford	All Ages	917	74	146	15	82	1,234
	< 18	41	8	22	**	¥	82
	< 20	129	17	40	**	¥	207
	20 +	788	57	106	¥	¥	1,027
Pittsfield	All Ages	530	22	12	11	13	588
	< 18	20	5	0	0	3	28
	< 20	56	7	**	0	**	69
	20 +	474	15	¥	11	¥	519
Quincy	All Ages	816	42	46	161	18	1,083
	< 18	8	0	**	0	**	10
	< 20	34	**	**	**	3	44
	20 +	782	¥	¥	¥	15	1,039
Revere	All Ages	434	33	84	55	11	617
	< 18	8	0	8	**	**	17
	< 20	20	6	18	**	**	47
	20 +	414	27	66	¥	¥	570
Salem	All Ages	437	18	83	8	**	550
	< 18	14	**	9	0	**	25
	< 20	24	**	17	0	**	46
	20 +	413	¥	66	8	**	504

**Table 24. (Continued)**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1995**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Somerville	All Ages	540	143	215	60	27	985
	< 18	8	7	9	0	0	24
	< 20	29	10	20	0	0	59
	20 +	511	133	195	60	27	926
Southbridge	All Ages	171	**	77	5	**	254
	< 18	13	0	9	0	0	22
	< 20	27	**	17	0	**	44
	20 +	144	**	60	5	**	210
Springfield	All Ages	971	554	736	46	24	2,331
	< 18	29	65	116	**	¥	217
	< 20	89	119	238	6	11	463
	20 +	882	435	498	40	13	1,868
Taunton	All Ages	710	27	38	3	14	792
	< 18	21	0	**	0	**	23
	< 20	76	**	5	**	**	85
	20 +	634	¥	33	**	13	707
Worcester	All Ages	1,481	193	519	149	32	2,374
	< 18	49	18	76	**	**	150
	< 20	138	36	160	11	10	355
	20 +	1,343	157	359	138	22	2,019

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\* Non-Hispanic

\*\* Information in cells with values less than 5 (excluding the "Other/Unknown" cells) is suppressed when births are cross-classified by age group and race/ethnicity in order to preserve the confidentiality of these cases. In these cases, additional cells with values less than 5 which enable calculation of the number of cases are also suppressed.

¥ These cells have numbers that are 5 and greater, but the numbers were suppressed to prevent inferring the value of the suppressed cell which contains fewer than 5 cases.

<sup>1</sup> 25 communities with the greatest number of teen births.

<sup>2</sup> Includes births of unknown maternal age.



**Table 25.**  
**Birth Characteristics Among Teen Births for Selected Communities<sup>1</sup>**  
**Massachusetts: 1995**

Community	Low Birthweight	Adequacy of Care <sup>2</sup>			Multiparous <sup>3</sup>	
	<2500 g	Adequate	Interm	Inadeq/None		
	Percent <sup>4</sup>	Percent <sup>4</sup>	Percent <sup>4</sup>	Percent <sup>4c</sup>	Number	Percent <sup>4</sup>
<b>Massachusetts</b>	<b>8.6</b>	<b>66.5</b>	<b>27.0</b>	<b>4.8</b>	<b>1,096</b>	<b>18.0</b>
Attleboro	8.3	62.5	25.0	12.5	11	22.9
Boston	7.6	70.4	23.5	6.2	165	18.4
Brockton	7.0	54.3	34.9	10.8	37	19.9
Chelsea	9.3	59.5	32.4	8.1	21	28.0
Chicopee	10.2	72.4	20.7	6.9	14	23.7
Fall River	9.4	61.2	33.5	5.3	26	15.4
Fitchburg	5.3	61.7	33.0	5.3	24	25.3
Framingham	3.8	92.3	7.7	0.0	8	15.4
Haverhill	6.7	66.3	27.0	6.7	11	12.4
Holyoke	11.5	64.0	31.4	4.7	51	29.3
Lawrence	9.3	45.8	41.8	12.5	75	25.0
Leominster	13.1	78.3	16.7	5.0	15	24.6
Lowell	8.6	70.1	23.9	6.0	71	23.6
Lynn	8.4	65.9	26.8	7.3	38	21.2
Methuen	6.0	66.0	26.0	8.0	9	18.0
New Bedford	7.2	55.6	36.6	7.8	47	22.8
Pittsfield	14.5	72.5	24.6	2.9	8	11.6
Quincy	9.1	70.5	27.3	2.3	9	20.5
Revere	8.5	66.0	34.0	0.0	11	23.4
Salem	13.0	78.3	17.4	4.3	3	6.5
Somerville	10.3	67.2	25.9	6.9	11	19.0
Southbridge	18.2	61.4	36.4	2.3	16	36.4
Springfield	11.4	57.5	35.4	7.1	128	27.6
Taunton	12.9	62.4	35.3	2.4	8	9.4
Worcester	10.8	80.7	14.5	4.8	71	20.2

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\*\* Percentages were not calculated for fewer than five observations.

<sup>1</sup> 25 communities with the greatest number of teen births.

<sup>2</sup> Adequacy of Prenatal Care is determined from an index which combines trimester of prenatal care registration with the number of prenatal care visits. See Glossary for definitions.

<sup>3</sup> Mothers who have had at least one previous live birth.

<sup>4</sup> Percentages are calculated only for cases where information is known.

**Table 26.**  
**Expected Educational Attainment and In-Hospital Paternity<sup>1</sup>**  
**Acknowledgment Among Teen Mothers**  
**for Selected Communities<sup>2</sup>**  
**Massachusetts: 1995**

Community	Behind Grade Level <sup>3</sup>		Paternity Acknowledgment
	Number	Percent	Percent
<b>Massachusetts</b>	<b>1,609</b>	<b>26.3</b>	<b>54.2</b>
Attleboro	18	37.5	83.3
Boston	205	22.8	30.9
Brockton	51	27.4	48.5
Chelsea	23	30.7	49.2
Chicopee	19	32.2	53.1
Fall River	55	32	73.6
Fitchburg	37	38.9	50.6
Framingham	7	13.5	71.1
Haverhill	20	22.5	54.4
Holyoke	65	37.4	64.6
Lawrence	92	30.7	45.8
Leominster	23	37.7	57.7
Lowell	85	28.2	54.6
Lynn	43	24	47.0
Methuen	17	34	57.8
New Bedford	56	27.1	64.9
Pittsfield	15	21.7	55.6
Quincy	9	20.5	55.6
Revere	14	29.8	54.8
Salem	7	15.2	51.2
Somerville	16	27.1	62.3
Southbridge	23	52.3	75.7
Springfield	170	36.7	44.1
Taunton	27	31.8	65.0
Worcester	113	31.8	47.7

Source: Registry of Vital Records and Statistics, MDPH, 1995.

<sup>1</sup> Paternity acknowledgment: voluntary self-acknowledgment by fathers or acknowledgment through legal action. This data reflects data collected in hospitals, at time of birth, only (see Glossary for further explanation).

<sup>2</sup> 25 communities with the greatest number of teen births.

<sup>3</sup> Behind grade level is defined as one or more grades behind the maximum expected age for a grade at the time of delivery. Adjustments were made for foreign-born students. See Glossary for explanation.



#### IV.

### *Birth Characteristics for all 351 Communities and the 27 Community Health Network Areas*

1

1. The first part of the book is devoted to a general

introduction to the subject of the book.

2. The second part of the book is devoted to a

discussion of the various methods of the subject.



**Table 27.**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
<b>Massachusetts</b>	<b>81,562</b>	<b>2,397</b>	<b>6,107</b>	<b>4,421</b>	<b>4,194</b>
Abington	232	2	5	**	5
Acton	266	1	3	**	**
Acushnet	69	3	8	**	**
Adams	104	3	10	8	9
Agawam	331	6	11	8	6
Alford	2	0	0	0	0
Amesbury	223	1	8	**	6
Amherst	194	7	15	9	9
Andover	366	1	5	**	**
Arlington	576	0	3	**	**
Ashburnham	63	4	5	**	**
Ashby	25	0	1	**	**
Ashfield	22	0	0	0	0
Ashland	238	0	9	7	5
Athol	107	8	21	17	13
Attleboro	676	16	48	35	36
Auburn	188	4	8	6	**
Avon	61	0	1	**	**
Ayer	117	1	5	**	**
Barnstable	468	5	23	21	14
Barre	52	0	3	**	**
Becket	23	0	0	0	0
Bedford	265	1	2	**	**
Belchertown	150	2	9	8	7
Bellingham	203	5	11	10	**

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Belmont	282	0	3	**	**
Berkley	83	0	3	**	**
Berlin	36	1	1	**	**
Bernardston	21	1	3	**	**
Beverly	514	8	21	15	12
Billerica	546	4	23	19	12
Blackstone	153	5	13	13	0
Blandford	12	0	0	0	0
Bolton	46	0	0	0	0
Boston	8,034	396	901	695	630
Bourne	273	2	13	11	5
Boxborough	63	0	0	0	0
Boxford	95	0	1	**	**
Boylston	49	0	0	0	0
Braintree	386	3	10	8	6
Brewster	68	0	3	**	**
Bridgewater	266	6	13	8	5
Brimfield	39	0	0	0	0
Brockton	1,415	68	186	122	141
Brookfield	42	1	3	0	**
Brookline	600	2	6	**	**
Buckland	19	0	0	0	0
Burlington	322	0	1	**	**
Cambridge	969	13	37	23	24
Canton	265	1	2	0	**
Carlisle	52	0	0	0	0

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Carver	128	5	11	9	**
Charlemont	19	1	2	**	**
Charlton	141	3	9	6	5
Chatham	47	0	5	**	5
Chelmsford	451	3	7	5	**
Chelsea	580	26	75	48	56
Cheshire	44	1	2	**	**
Chester	18	3	4	**	**
Chesterfield	8	0	0	0	0
Chicopee	628	21	59	43	40
Chilmark	5	0	0	0	0
Clarksburg	15	0	1	**	**
Clinton	169	7	20	14	14
Cohasset	107	0	2	**	**
Colrain	22	0	2	**	**
Concord	181	0	1	**	**
Conway	20	0	1	**	**
Cummington	8	0	0	0	0
Dalton	88	2	8	5	**
Danvers	299	3	7	6	**
Dartmouth	230	2	14	11	8
Dedham	286	2	11	9	7
Deerfield	54	1	1	**	**
Dennis	112	3	6	6	5
Dighton	60	0	1	**	**
Douglas	88	2	7	**	**

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Dover	57	0	0	0	0
Dracut	413	4	16	15	9
Dudley	99	0	4	**	**
Dunstable	33	0	0	0	0
Duxbury	193	3	5	**	0
East Bridgewater	166	3	12	8	8
East Brookfield	19	0	1	**	**
East Longmeadow	141	1	2	**	0
Eastham	20	1	3	**	**
Easthampton	171	5	14	7	13
Easton	275	4	7	**	**
Edgartown	33	0	3	**	**
Egremont	3	0	0	0	0
Erving	9	**	**	**	**
Essex	65	0	1	**	**
Everett	537	15	37	28	28
Fairhaven	175	4	11	7	7
Fall River	1,179	70	172	108	123
Falmouth	287	5	13	10	5
Fitchburg	533	47	95	63	72
Florida	6	0	0	0	0
Foxborough	227	2	6	**	**
Framingham	956	21	52	48	39
Franklin	560	3	13	12	**
Freetown	75	1	2	**	0
Gardner	265	15	41	35	34



**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Gay Head	1	0	0	0	0
Georgetown	120	1	1	**	**
Gill	17	0	1	**	**
Gloucester	359	6	22	13	17
Goshen	14	0	0	0	0
Gosnold	1	0	0	0	0
Grafton	209	1	3	**	**
Granby	66	1	4	**	**
Granville	16	1	1	**	**
Great Barrington	57	2	5	5	**
Greenfield	202	7	22	20	17
Groton	152	0	2	0	0
Groveland	79	0	3	**	**
Hadley	35	1	2	0	**
Halifax	109	1	4	**	**
Hamilton	95	0	0	0	0
Hampden	45	1	4	**	0
Hancock	8	0	0	0	0
Hanover	145	0	2	**	**
Hanson	123	1	5	5	**
Hardwick	29	0	3	0	**
Harvard	84	0	1	**	**
Harwich	97	3	6	**	**
Hatfield	25	0	0	0	0
Haverhill	863	39	89	64	62
Hawley	2	0	0	0	0



**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Heath	7	0	0	0	0
Hingham	265	0	5	5	**
Hinsdale	24	2	4	**	**
Holbrook	107	2	8	**	**
Holden	183	0	2	**	0
Holland	33	0	0	0	0
Holliston	184	3	5	**	0
Holyoke	684	78	174	115	152
Hopedale	96	2	4	**	**
Hopkinton	195	2	2	**	0
Hubbardston	50	1	3	**	**
Hudson	241	7	10	8	6
Hull	167	4	9	7	**
Huntington	22	2	3	**	**
Ipswich	155	2	8	6	7
Kingston	192	2	4	**	**
Lakeville	106	0	4	**	0
Lancaster	49	2	3	**	0
Lanesborough	32	1	2	**	**
Lawrence	1,298	135	300	195	229
Lee	69	1	2	**	**
Leicester	111	3	6	5	**
Lenox	54	2	3	**	**
Leominster	612	18	61	48	32
Leverett	19	0	1	**	**
Lexington	297	0	0	0	0

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began In 1st Trimester	Number Paid by Public Funds
Leyden	5	**	**	**	**
Lincoln	70	0	0	0	0
Littleton	112	0	2	**	**
Longmeadow	173	0	2	**	**
Lowell	1,739	129	301	218	245
Ludlow	211	4	14	9	**
Lunenburg	109	1	4	**	**
Lynn	1,286	78	179	130	133
Lynnfield	121	0	0	0	0
Malden	784	8	29	23	21
Manchester	62	0	2	**	0
Mansfield	454	4	13	8	6
Marblehead	236	0	0	0	0
Marion	34	0	0	0	0
Marlborough	581	13	37	30	26
Marshfield	361	1	6	**	**
Mashpee	143	4	8	6	**
Mattapoisett	56	0	1	**	**
Maynard	177	1	5	**	**
Medfield	169	0	0	0	0
Medford	647	5	16	10	7
Medway	202	0	1	**	**
Melrose	376	1	7	6	**
Mendon	61	0	1	**	**
Merrimac	76	1	3	**	**
Methuen	577	19	50	41	27

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Middleborough	253	7	20	14	15
Middlefield	2	0	0	0	0
Middleton	85	0	1	**	**
Milford	384	5	18	17	14
Millbury	159	4	14	9	8
Millis	140	1	2	**	**
Millville	41	2	5	**	**
Milton	275	2	4	**	**
Monroe	1	0	0	0	0
Monson	94	1	2	0	0
Montague	97	5	10	8	9
Monterey	7	0	0	0	0
Montgomery	8	0	0	0	0
Mount Washington	2	0	0	0	0
Nahant	38	0	0	0	0
Nantucket	102	1	3	**	**
Natick	472	2	5	**	**
Needham	399	1	1	**	**
New Ashford	4	0	0	0	0
New Bedford	1,234	82	207	131	160
New Braintree	11	0	0	0	0
New Marlborough	18	1	1	**	**
New Salem	8	0	0	0	0
Newbury	90	0	2	**	**
Newburyport	202	5	8	7	5
Newton	818	1	6	5	**

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Norfolk	135	0	1	**	**
North Adams	180	14	34	28	27
North Andover	308	4	10	6	8
North Attleborough	405	5	15	10	10
North Brookfield	53	1	5	**	**
North Reading	199	0	1	**	**
Northampton	232	11	27	22	21
Northborough	173	0	5	**	**
Northbridge	201	3	14	12	10
Northfield	32	2	2	**	**
Norton	287	1	8	7	**
Norwell	108	1	1	**	**
Norwood	392	2	11	7	7
Oak Bluffs	40	2	2	**	0
Oakham	17	0	0	0	0
Orange	76	4	12	9	8
Orleans	35	1	1	**	**
Otis	10	1	1	**	**
Oxford	142	1	10	9	**
Palmer	193	12	23	18	14
Paxton	31	0	0	0	0
Peabody	601	3	18	15	9
Pelham	9	0	0	0	0
Pembroke	236	1	6	**	**
Pepperell	130	0	5	**	**
Peru	7	0	0	0	0



**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began In 1st Trimester	Number Paid by Public Funds
Petersham	9	0	0	0	0
Phillipston	15	0	0	0	0
Pittsfield	588	28	69	55	44
Plainfield	5	0	0	0	0
Plainville	92	0	3	**	**
Plymouth	677	11	42	29	20
Plympton	34	0	1	**	**
Princeton	27	0	1	**	**
Provincetown	16	0	2	**	**
Quincy	1,083	10	44	33	28
Randolph	413	7	18	12	10
Raynham	132	2	6	**	**
Reading	341	1	2	**	**
Rehoboth	89	1	2	0	**
Revere	617	17	47	35	35
Richmond	12	0	1	**	**
Rochester	52	0	1	**	**
Rockland	269	3	13	11	7
Rockport	72	0	1	**	**
Rowe	6	**	**	**	**
Rowley	77	2	2	**	0
Royalston	13	0	2	**	**
Russell	21	0	3	**	**
Rutland	69	0	1	**	**
Salem	550	25	46	40	31
Salisbury	97	3	7	5	**



**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Sandisfield	6	**	**	**	**
Sandwich	234	3	7	6	5
Saugus	284	3	10	6	5
Savoy	7	0	0	0	0
Scituate	228	1	6	**	**
Seekonk	127	4	8	5	**
Sharon	231	1	1	**	**
Sheffield	36	0	0	0	0
Shelburne	12	0	1	**	**
Sherborn	46	0	0	0	0
Shirley	66	2	3	**	**
Shrewsbury	436	1	11	11	**
Shutesbury	17	0	0	0	0
Somerset	142	8	17	11	8
Somerville	985	24	59	41	40
South Hadley	153	1	7	**	5
Southampton	53	0	3	**	**
Southborough	112	0	1	**	**
Southbridge	254	22	44	28	32
Southwick	105	2	5	**	**
Spencer	137	2	15	11	10
Springfield	2,331	217	463	301	368
Sterling	85	0	2	**	**
Stockbridge	11	0	2	**	**
Stoneham	262	2	5	**	**
Stoughton	320	2	11	7	**

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Stow	78	0	2	**	**
Sturbridge	87	2	4	**	**
Sudbury	229	3	4	**	**
Sunderland	45	0	1	**	**
Sutton	115	1	3	**	**
Swampscott	162	0	0	0	0
Swansea	174	2	9	**	6
Taunton	792	23	85	56	56
Templeton	100	1	3	**	0
Tewksbury	455	4	6	**	5
Tisbury	41	1	2	**	**
Tolland	4	0	0	0	0
Topsfield	55	1	2	**	**
Townsend	116	2	7	5	**
Truro	11	0	0	0	0
Tyngsborough	173	3	7	6	**
Tyringham	3	0	**	**	**
Upton	113	0	1	**	**
Uxbridge	160	2	7	5	**
Wakefield	320	0	4	**	**
Wales	24	0	2	**	**
Walpole	264	1	1	**	**
Waltham	779	16	42	35	29
Ware	93	6	16	14	8
Wareham	249	15	40	36	26
Warren	66	5	17	9	12

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began In 1st Trimester	Number Paid by Public Funds
Warwick	11	0	0	0	0
Washington	6	0	0	0	0
Watertown	400	0	5	**	**
Wayland	166	0	1	**	**
Webster	216	15	31	28	22
Wellesley	362	0	2	**	**
Wellfleet	15	0	0	0	0
Wendell	6	0	0	0	0
Wenham	31	0	1	**	**
West Boylston	60	0	1	**	**
West Bridgewater	72	1	3	**	0
West Brookfield	46	4	6	**	**
West Newbury	44	0	0	0	0
West Springfield	349	17	33	17	24
West Stockbridge	17	0	0	0	0
West Tisbury	29	0	0	0	0
Westborough	214	0	2	**	**
Westfield	452	13	42	29	30
Westford	328	1	4	**	**
Westhampton	12	0	0	0	0
Westminster	72	1	3	**	**
Weston	122	1	1	**	**
Westport	113	1	5	5	**
Westwood	163	0	1	**	**
Weymouth	784	13	40	28	13
Whately	22	0	0	0	0

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1995**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Whitman	178	1	8	5	**
Wilbraham	121	3	4	**	**
Williamsburg	33	0	1	**	**
Williamstown	52	1	3	**	**
Wilmington	344	1	11	7	**
Winchendon	115	2	10	9	**
Winchester	261	0	0	0	0
Windsor	3	0	0	0	0
Winthrop	211	0	4	**	**
Woburn	437	5	15	9	10
Worcester	2,374	150	355	294	276
Worthington	10	0	0	0	0
Wrentham	151	2	2	**	0
Yarmouth	217	6	20	17	14

Source: Registry of Vital Records and Statistics, MDPH, 1995.

\*\* For communities where "Number of Births to All Ages" is less than 10, cells with values of 1-4 are suppressed. For all communities, "Prenatal Care (< 20 Years)" cells with values of 1-4 suppressed. For communities where the number of teen births ("<20 Years") equals one, prenatal care cells are suppressed. Cells have also been suppressed in those instances where the publication of cell values would lead to inadvertent identification of individuals.



**Table 28.**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1995**

Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began In 1st Trimester	Number Paid by Public Funds
<b>Massachusetts</b>	<b>81,562</b>	<b>2,397</b>	<b>6,107</b>	<b>4,421</b>	<b>4,194</b>
1 Community Health Network of Berkshire County	1,498	60	150	120	97
2 Greater Franklin/North Quabbin CHN	915	32	85	71	59
3 Greater Northampton Area Partnership for Health	1,273	34	98	67	69
3.1 Greater Holyoke Area	2,015	121	296	200	232
4 Greater Springfield Community Health Network	3,944	261	553	359	420
5 Greater Southbridge	1,398	56	151	110	97
6 Greater Milford Community Partners for Health	2,377	30	98	83	41
7 Greater Framingham Area	5,240	58	155	128	94
8 Greater Worcester Area CHN	3,800	163	400	330	297
9 Fitchburg/Gardner Area	3,199	105	283	205	180
10 Greater Lowell Community Health Network	4,138	148	364	269	279
11 Greater Lawrence Area	2,634	159	366	245	266
12 Greater Haverhill Area	1,966	52	124	88	81
13 Beverly/Gloucester Area	1,408	17	58	39	39
14 North Shore Community Health Network	3,577	112	260	197	182
15 Greater Woburn/Concord/Littleton Area	2,670	8	35	21	17
16 Malden/Medford/Melrose Area	3,466	32	101	75	69
17 Somerville/Cambridge Area	3,212	37	107	70	71
18 Newton/Waltham West Suburban Health Network	2,986	21	64	54	41
19 Alliance for Community Health (Boston)	10,042	441	1,033	784	725
20 Blue Hills Community Health Alliance	4,704	45	153	109	76
22 Greater Brockton Community Health Network	3,092	89	254	161	170
23 Greater Plymouth South Shore	2,467	28	99	70	47



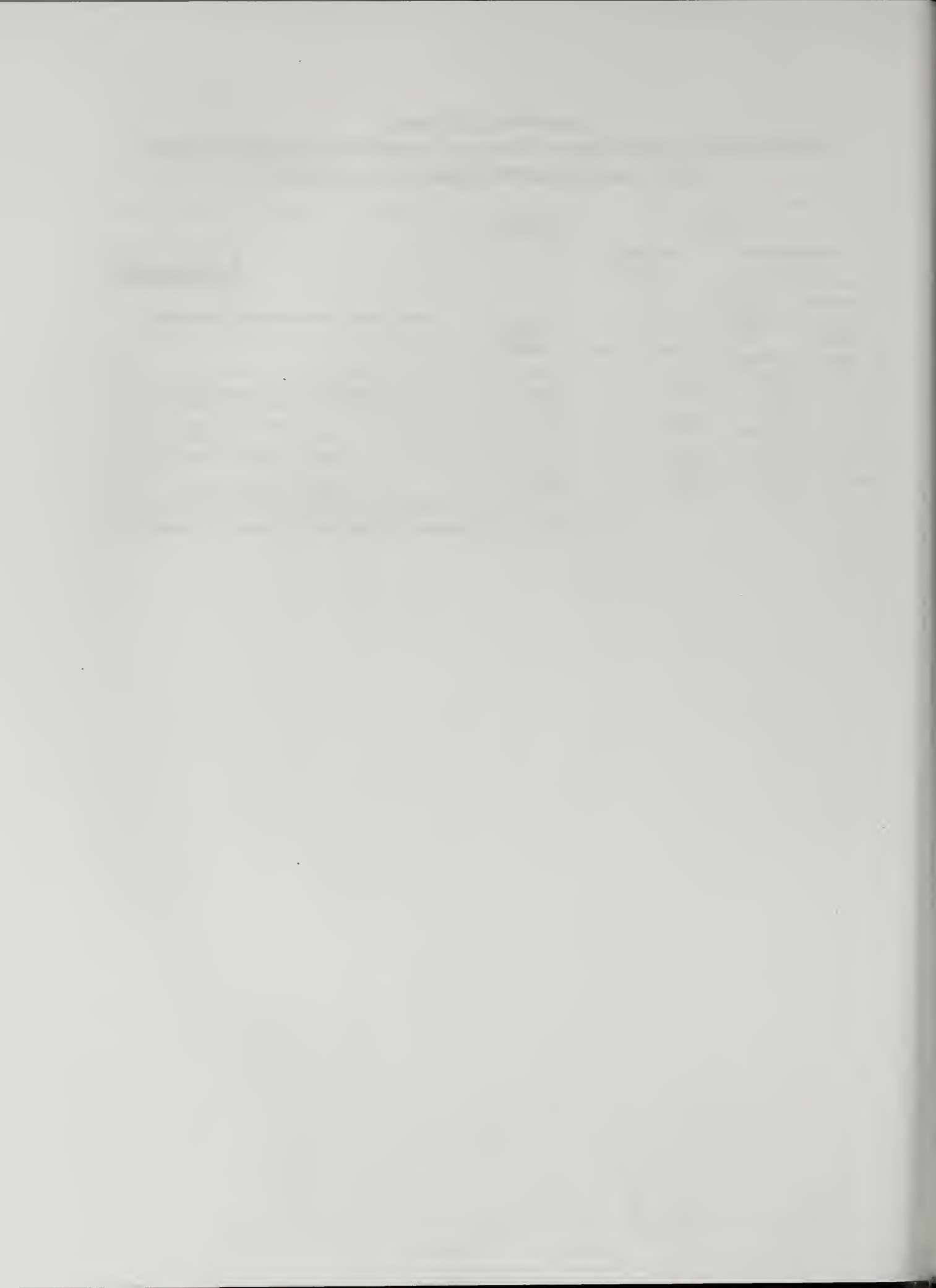
**Table 28. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1995**

Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
24 Greater Attleboro/Taunton Area	3,464	63	213	145	132
25 Greater Fall River Area	1,608	81	203	128	139
26 Greater New Bedford Area	2,174	107	284	193	205
27 Cape Cod and the Islands	2,295	37	120	100	69

Source: Registry of Vital Records and Statistics, MDPH, 1995.

<sup>1</sup> See Appendix for Community Health Network Area definition and city/town groupings.

## *Appendix*



## *Technical Notes*

We recommend that the following cautions be kept in mind when examining the data:

- In cases where there are small numbers of teen births, especially at the city/town level and by race/ethnicity or age, small changes in the numbers from year to year will produce large changes in percentages, making the differences appear more significant than they are in reality.
- Unless otherwise stated, percentages are based on the number of births or mothers that have known information regarding a demographic or birth characteristic.
- Birth rates (number of births per 1,000 women) are calculated using Census counts of the resident population of Massachusetts. Because the Census is taken only once every ten years, the annual number of residents in each city/town and in the state for non-Census years are projected estimates, not actual counts. Therefore, the numbers of resident women may be underestimated (resulting in inflated birth rates), or overestimated (resulting in lower birth rates).
- The infant mortality rate for women under the age of 20 is not yet available for the 1995 year of released birth and death data. In order to get an accurate count of deaths to infants born in 1995, it is necessary to link the birth and death files over a three year period (1994-1996); and because the 1996 death file data was not available at the time of this report, 1994 data were used. To clarify further, those infant deaths resulting from births in 1994 must be removed from the 1995 deaths data set; those births in 1995 that resulted in deaths in 1996 must be added to the 1995 death file; and finally there are those births in 1995 that ended in death in the same year. The resulting file is then linked to the 1995 birth file, and this linked file becomes the source for calculating maternal age-specific infant mortality rates.





## *Glossary*

**Adequacy of Prenatal Care:** Adequacy of prenatal care is calculated from information reported by the birth hospital. The index of Adequacy of Prenatal Care (based on the Kessner Index) has three categories (adequate, intermediate, inadequate/none) based on the trimester in which prenatal care began and the number of prenatal visits. The general classification scheme is:

<u>Category</u>	<u>Trimester Care Began</u>	<u>Number of Visits</u>
Adequate	1	9 or more
Intermediate	1	5-8
	2	5 or more
Inadequate/None	1	1-4
	2	1-4
	3	1 or more

The classification is adjusted for gestational age to allow for proper classification of premature infants.

**Birth Rate:** see Teen Birth Rate.

**Birthweight Categories:** Birthweight is the weight of an infant recorded at the time of delivery.

**Normal Birthweight (NBW):** An infant's weight of 2,500 grams (5.5 pounds) or more

**Low Birthweight (LBW):** An infant's weight of less than 2,500 grams (5.5 pounds)

**Very Low Birthweight (VLBW):** An infant's weight of less than 1,500 grams (3.3 pounds)

**Education:** Education is self-reported on the birth certificate by the mother and indicates the highest grade or total number of years of schooling she has completed.

**Ethnicity:** Mother's ethnicity is self-reported.

**Expected Educational Attainment:** Refers to the maximum expected age of a student in a particular school grade. Teen mothers were classified as being at least one grade behind if they were two or more years older than the maximum expected age for the reported grade level. For example, if a teen is 16 years old and reports she has completed eighth grade, then she is at least one year behind the expected age for that grade. The following age-for grade cutoffs were used:

<u>Grade</u>	<u>Maximum Expected Age</u>
6th	12
7th	13
8th	14
9th	15
10th	16
11th	17
12th	18

Due to language or educational differences, foreign-born youth are often placed in school at least one grade behind the expected grade. As a result, the foreign-born teen mothers were classified as being at least one grade behind if they were *three* or more years older than the maximum expected.

**Gestational Age:** The length of time a fetus is *in utero* before birth. In this publication, the clinical estimate of gestational age has been used for analysis. Clinical gestational age is determined by the attendant at birth or a physician providing postnatal care to the newborn. A normal gestational age is defined as delivery between the completion of the 37th and the 42nd week of pregnancy.

**Healthy Start:** Healthy Start is a Massachusetts-funded program providing services and financing for prenatal care to low-income (up to 200% of the poverty level) pregnant women who lack health insurance but do not qualify for Medicaid.

**Infant Mortality:** The death of a child under 1 year of age ( $\leq 364$  days old).

**Infant Mortality Rate:** The number of infant deaths in a year divided by the number of births in that year, multiplied by 1,000 to express the rate per 1,000 live births.

**Live Birth:** A live birth is defined as any infant who breathes or shows any other evidence of life (such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles) after delivery. All figures and tables in this report, showing Massachusetts data, are based on live births to Massachusetts residents (see Resident Birth).

**Low Birthweight:** see Birthweight Categories.

**Normal Birthweight:** see Birthweight Categories.

**Mother's Age:** Mother's age is computed from her date of birth and the date of delivery.

**Multiparous:** A multiparous mother is one who has had at least one previous live birth.

**Parity:** The number of live infants ever born to the mother. Parity includes all previous live births as well as the infant named on the birth certificate.

**Paternity Acknowledgement:** The process by which the paternity of an infant is legally established when the parents are unmarried. As part of the birth registration process, parents sign an acknowledgement form and their signatures are notarized. The father's information is then added to the child's birth certificate. Paternity can also be acknowledged at a town clerk's office after the mother and child have been discharged from the hospital. Paternity may be established through legal action or through voluntary acknowledgement in the case of unmarried couples; when a couple is married, the husband is legally considered the infant's father. *Paternity acknowledgement data in this report reflects voluntary self-acknowledgement data collected in hospitals, at time of birth only.*

**Prenatal Care Payment Source:** Prenatal care payment source is self-reported by the mother. Groupings include:

- Private: Blue Cross/Blue Shield, commercial insurance, and health maintenance organizations (HMOs). The HMO category may include Medicaid recipients in managed care programs.
- Public: Medicaid, Healthy Start, Medicare and other government sources (e.g., CHAMPUS).
- Uninsured: Care paid for out of pocket or provided free of charge.
- Other: Workers' Compensation and other specified types of funding not classified elsewhere.

**Race/Hispanic Ethnicity:** Mother's race and Hispanic ethnicity are self-reported.

**Resident Birth:** Resident birth is defined as the birth of an infant whose mother reports her usual place of residence as Massachusetts. In Massachusetts, a resident is a person with a permanent address in one of the 351 cities or towns. Massachusetts resident births include all births that occur among residents of the Commonwealth whether they occur in Massachusetts or elsewhere.

**Teen Birth Rate:** The number of children born among females ages 15 to 19 divided by the population of females in that age group, multiplied by 1,000.

**Very Low Birthweight:** see Birthweight Categories.

# **1995 Population Estimates of Females Ages 15 to 19 Years Living in 25 Massachusetts Communities with the Highest Number of Teen Births in 1995**

<u>Community</u>	<u>Estimated Number of Females, Ages 15-19 years</u>
<b>Massachusetts</b>	<b>204,800</b>
Attleboro	1,233
Boston	21,390
Brockton	3,267
Chelsea	858
Chicopee	1,859
Fall River	3,169
Fitchburg	1,762
Framingham	2,214
Haverhill	1,763
Holyoke	1,443
Lawrence	2,586
Leominster	1,232
Lowell	3,948
Lynn	2,419
Methuen	1,335
New Bedford	3,397
Pittsfield	1,521
Quincy	2,257
Revere	1,049
Salem	1,238
Somerville	1,978
Southbridge	573
Springfield	5,802
Taunton	1,602
Worcester	6,447

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Source: 1995 estimates from the Massachusetts Institute for Social and Economic Research (MISER).



Massachusetts Cities, Towns, Counties, and Community Health Network Area (CHNAs)

City/Town	County	CHNA	City/Town	County	CHNA
Abington	Plymouth	22	Dartmouth	Bristol	26
Acton	Middlesex	15	Dedham	Norfolk	18
Acushnet	Bristol	26	Deerfield	Franklin	2
Adams	Berkshire	1	Dennis	Barnstable	27
Agawam	Hampden	4	Dighton	Bristol	24
Alford	Berkshire	1	Douglas	Worcester	6
Amesbury	Essex	12	Dover	Norfolk	18
Amherst	Hampshire	3	Dracut	Middlesex	10
Andover	Essex	11	Dudley	Worcester	5
Arlington	Middlesex	17	Dunstable	Middlesex	10
Ashburnham	Worcester	9	Duxbury	Plymouth	23
Ashby	Middlesex	9	East Bridgewater	Plymouth	22
Ashfield	Franklin	2	East Brookfield	Worcester	5
Ashland	Middlesex	7	East Longmeadow	Hampden	4
Athol	Worcester	2	Eastham	Barnstable	27
Attleboro	Bristol	24	Easthampton	Hampshire	3
Auburn	Worcester	8	Easton	Bristol	22
Avon	Norfolk	22	Edgartown	Dukes	27
Ayer	Middlesex	9	Egremont	Berkshire	1
Barnstable	Barnstable	27	Erving	Franklin	2
Barre	Worcester	9	Essex	Essex	13
Becket	Berkshire	1	Everett	Middlesex	16
Bedford	Middlesex	15	Fairhaven	Bristol	26
Belchertown	Hampshire	3	Fall River	Bristol	25
Bellingham	Norfolk	6	Falmouth	Barnstable	27
Belmont	Middlesex	17	Fitchburg	Worcester	9
Berkley	Bristol	24	Florida	Berkshire	1
Berlin	Worcester	9	Foxborough	Norfolk	7
Bernardston	Franklin	2	Framingham	Middlesex	7
Beverly	Essex	13	Franklin	Norfolk	6
Billerica	Middlesex	10	Freetown	Bristol	26
Blackstone	Worcester	6	Gardner	Worcester	9
Blandford	Hampden	4	Gay Head	Dukes	27
Bolton	Worcester	9	Georgetown	Essex	12
Boston	Suffolk	19	Gill	Franklin	2
Bourne	Barnstable	27	Gloucester	Essex	13
Boxborough	Middlesex	15	Goshen	Hampshire	3
Boxford	Essex	12	Gosnold	Dukes	27
Boylston	Worcester	8	Grafton	Worcester	8
Braintree	Norfolk	20	Granby	Hampshire	3
Brewster	Barnstable	27	Granville	Hampden	4
Bridgewater	Plymouth	22	Great Barrington	Berkshire	1
Brimfield	Hampden	5	Greenfield	Franklin	2
Brockton	Plymouth	22	Groton	Middlesex	9
Brookfield	Worcester	5	Groveland	Essex	12
Brookline	Norfolk	19	Hadley	Hampshire	3
Buckland	Franklin	2	Halifax	Plymouth	23
Burlington	Middlesex	15	Hamilton	Essex	13
Cambridge	Middlesex	17	Hampden	Hampden	4
Canton	Norfolk	20	Hancock	Berkshire	1
Carlisle	Middlesex	15	Hanover	Plymouth	23
Carver	Plymouth	23	Hanson	Plymouth	23
Charlemont	Franklin	2	Hardwick	Worcester	9
Charlton	Worcester	5	Harvard	Worcester	9
Chatham	Barnstable	27	Harwich	Barnstable	27
Chelmsford	Middlesex	10	Hatfield	Hampshire	3
Chelsea	Suffolk	19	Haverhill	Essex	12
Cheshire	Berkshire	1	Hawley	Franklin	2
Chester	Hampden	3.1	Heath	Franklin	2
Chesterfield	Hampshire	3	Hingham	Plymouth	20
Chicopee	Hampden	3.1	Hinsdale	Berkshire	1
Chilmark	Dukes	27	Holbrook	Norfolk	22
Clarksburg	Berkshire	1	Holden	Worcester	8
Clinton	Worcester	9	Holland	Hampden	5
Cohasset	Norfolk	20	Holliston	Middlesex	7
Colrain	Franklin	2	Holyoke	Hampden	3
Concord	Middlesex	15	Hopedale	Worcester	6
Conway	Franklin	2	Hopkinton	Middlesex	7
Cummington	Hampshire	3	Hubbardston	Worcester	9
Dalton	Berkshire	1	Hudson	Middlesex	7
Danvers	Essex	14	Hull	Plymouth	20



City/Town	County	CHNA	City/Town	County	CHNA
Huntington	Hampshire	3.1	Northampton	Hampshire	3
Ipswich	Essex	13	Northborough	Worcester	7
Kingston	Plymouth	23	Northbridge	Worcester	6
Lakeville	Plymouth	24	Northfield	Franklin	2
Lancaster	Worcester	9	Norton	Bristol	24
Lanesborough	Berkshire	1	Norwell	Plymouth	20
Lawrence	Essex	11	Norwood	Norfolk	20
Lee	Berkshire	1	Oak Bluffs	Dukes	27
Leicester	Worcester	8	Oakham	Worcester	9
Lenox	Berkshire	1	Orange	Franklin	2
Leominster	Worcester	9	Orleans	Barnstable	27
Leverett	Franklin	2	Otis	Berkshire	1
Lexington	Middlesex	15	Oxford	Worcester	5
Leyden	Franklin	2	Palmer	Hampden	4
Lincoln	Middlesex	15	Paxton	Worcester	8
Littleton	Middlesex	15	Peabody	Essex	14
Longmeadow	Hampden	4	Pelham	Hampshire	3
Lowell	Middlesex	10	Pembroke	Plymouth	23
Ludlow	Hampden	3.1	Pepperell	Middlesex	9
Lunenburg	Worcester	9	Peru	Berkshire	1
Lynn	Essex	14	Petersham	Worcester	2
Lynnfield	Essex	14	Phillipston	Worcester	2
Malden	Middlesex	16	Pittsfield	Berkshire	1
Manchester	Essex	13	Plainfield	Hampshire	3
Mansfield	Bristol	24	Plainville	Norfolk	7
Marblehead	Essex	14	Plymouth	Plymouth	23
Marion	Plymouth	26	Plympton	Plymouth	23
Marlborough	Middlesex	7	Princeton	Worcester	9
Marshfield	Plymouth	23	Provincetown	Barnstable	27
Mashpee	Barnstable	27	Quincy	Norfolk	20
Mattapoisett	Plymouth	26	Randolph	Norfolk	20
Maynard	Middlesex	7	Raynham	Bristol	24
Medfield	Norfolk	7	Reading	Middlesex	14
Medford	Middlesex	16	Rehoboth	Bristol	24
Medway	Norfolk	6	Revere	Suffolk	19
Melrose	Middlesex	14	Richmond	Berkshire	1
Mendon	Worcester	6	Rochester	Plymouth	26
Merrimac	Essex	12	Rockland	Plymouth	23
Methuen	Essex	11	Rockport	Essex	13
Middleborough	Plymouth	24	Rowe	Franklin	2
Middlefield	Hampshire	3	Rowley	Essex	12
Middleton	Essex	11	Royalston	Worcester	2
Milford	Worcester	6	Russell	Hampden	4
Millbury	Worcester	8	Rutland	Worcester	9
Millis	Norfolk	7	Salem	Essex	14
Millville	Worcester	6	Salisbury	Essex	12
Milton	Norfolk	20	Sandisfield	Berkshire	1
Monroe	Franklin	2	Sandwich	Barnstable	27
Monson	Hampden	4	Saugus	Essex	14
Montague	Franklin	2	Savoy	Berkshire	1
Monterey	Berkshire	1	Scituate	Plymouth	20
Montgomery	Hampden	4	Seekonk	Bristol	24
Mt. Washington	Berkshire	1	Sharon	Norfolk	20
Nahant	Essex	14	Sheffield	Berkshire	1
Nantucket	Nantucket	27	Shelburne	Franklin	2
Natick	Middlesex	7	Sherborn	Middlesex	7
Needham	Norfolk	18	Shirley	Middlesex	9
New Ashford	Berkshire	1	Shrewsbury	Worcester	8
New Bedford	Bristol	26	Shutesbury	Franklin	2
New Braintree	Worcester	9	Somerset	Bristol	25
New Marlborough	Berkshire	1	Somerville	Middlesex	17
New Salem	Franklin	2	South Hadley	Hampshire	3
Newbury	Essex	12	Southampton	Hampshire	3
Newburyport	Essex	12	Southborough	Worcester	7
Newton	Middlesex	18	Southbridge	Worcester	5
Norfolk	Norfolk	7	Southwick	Hampden	4
North Adams	Berkshire	1	Spencer	Worcester	5
North Andover	Essex	11	Springfield	Hampden	4
N. Attleborough	Bristol	24	Sterling	Worcester	9
North Brookfield	Worcester	5	Stockbridge	Berkshire	1
North Reading	Middlesex	14	Stoneham	Middlesex	14

## Instant Rough Draft Peer Response Guidelines:

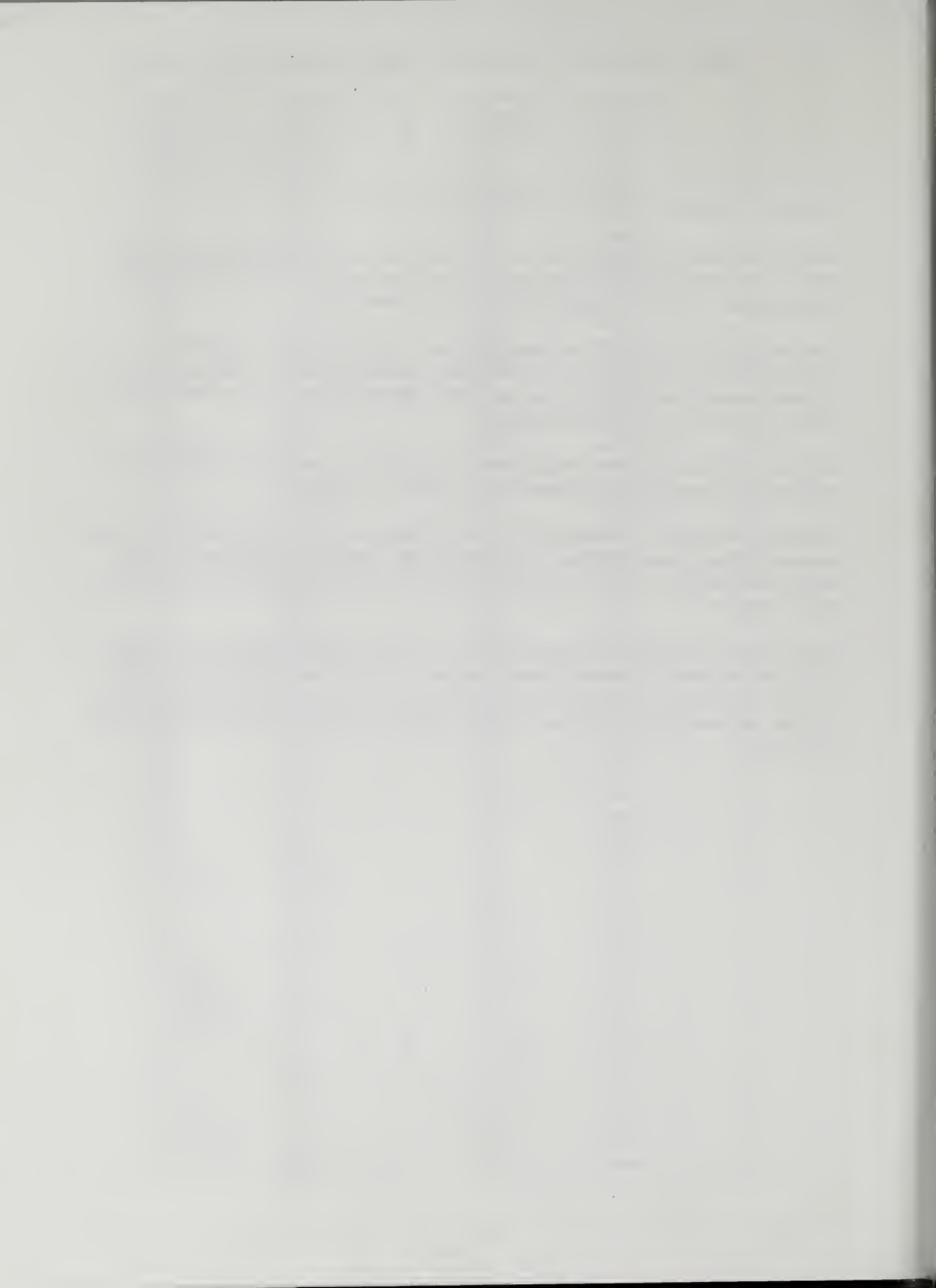
What do you already know about your partners subject? Do some freewriting on the author's topic. It may be a topic you know nothing about, or it may be a topic of which you have very strong opinions. Either way, help the author do some brainstorming.

If the author's topic is one you know something about, do some writing that explains your personal background, giving your angle on the topic, considering what you already know. Help the author see the "whole picture"-- you may want to play the "devil's advocate" and spur the author to think about the topic in different way.

If you do not know much about the topic, take notes of what most interests you in the author's rough draft and what you think the reader needs to know more about.

Make a list of questions for the author-- prompts for further research. It helps if the author finds the areas that most interest the reader; in this stage of the essay, it may significantly help the author narrow down the scope of the research. The "heart" of the essay may not be where the author thinks it is.

Think about the other types of feedback we have given this semester and respond accordingly. The author may benefit from more "general" response, like how you thought the rough draft sounded (e.g. if the author sounded "fired up," if the voice of the essay is "casual" or "formal"). You may just want to relate to the author what was going through your mind when you listened to the essay



City/Town	County	CHNA	
Stoughton	Norfolk	22	
Stow	Middlesex	7	
Sturbridge	Worcester	5	
Sudbury	Middlesex	7	
Sunderland	Franklin	2	
Sutton	Worcester	6	
Swampscott	Essex	14	
Swansea	Bristol	25	
Taunton	Bristol	24	
Templeton	Worcester	9	
Tewksbury	Middlesex	10	
Tisbury	Dukes	27	
Tolland	Hampden	4	
Topsfield	Essex	13	
Townsend	Middlesex	9	
Truro	Barnstable	27	
Tyngsborough	Middlesex	10	
Tyringham	Berkshire	1	
Upton	Worcester	6	
Uxbridge	Worcester	6	
Wakefield	Middlesex	14	
Wales	Hampden	5	
Walpole	Norfolk	7	
Waltham	Middlesex	18	
Ware	Hampshire	3	
Wareham	Plymouth	26	
Warren	Worcester	5	
Warwick	Franklin	2	
Washington	Berkshire	1	
Watertown	Middlesex	17	
Wayland	Middlesex	7	
Webster	Worcester	5	
Wellesley	Norfolk	18	
Wellfleet	Barnstable	27	
Wendell	Franklin	2	
Wenham	Essex	13	
West Boylston	Worcester	8	
West Bridgewater	Plymouth	22	
West Brookfield	Worcester	5	
West Newbury	Essex	12	
West Springfield	Hampden	4	
West Stockbridge	Berkshire	1	
West Tisbury	Dukes	27	
Westborough	Worcester	7	
Westfield	Hampden	3.1	
Westford	Middlesex	10	
Westhampton	Hampshire	3	
Westminster	Worcester	9	
Weston	Middlesex	18	
Westport	Bristol	25	
Westwood	Norfolk	18	
Weymouth	Norfolk	20	
Whately	Franklin	2	
Whitman	Plymouth	22	
Wilbraham	Hampden	4	
Williamsburg	Hampshire	3	
Williamstown	Berkshire	1	
Wilmington	Middlesex	15	
Winchendon	Worcester	9	
Winchester	Middlesex	15	
Windsor	Berkshire	1	
Winthrop	Suffolk	19	
Woburn	Middlesex	15	
Worcester	Worcester	8	
Worthington	Hampshire	3	
Wrentham	Norfolk	7	
Yarmouth	Barnstable	27	

#### Community Health Network Areas

1. Community Health Network of Berkshire County
2. Greater Franklin/North Quabbin CHN
3. Greater Northampton Area Partnership for Health
- 3.1 Greater Holyoke Area
4. Greater Springfield Community Health Network
5. Greater Southbridge
6. Greater Milford Community Partners for Health
7. Greater Framingham Area
8. Greater Worcester Area CHN
9. Fitchburg/Gardner Area
10. Greater Lowell Community Health Network
11. Greater Lawrence Area
12. Greater Haverhill Area
13. Beverly/Gloucester Area
14. North Shore Community Health Network
15. Greater Woburn/Concord/Littleton Area
16. Malden/Medford/Melrose Area
17. Somerville/Cambridge Area
18. Newton/Waltham West Suburban Health Network
19. Alliance for Community Health
20. Blue Hills Community Health Alliance
22. Greater Brockton Community Health Network
23. Greater Plymouth South Shore
24. Greater Attleboro/Taunton Area
25. Greater Fall River Area
26. Greater New Bedford Area
27. Cape Cod and the Islands

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# ***Adolescent Births: A Statistical Profile***

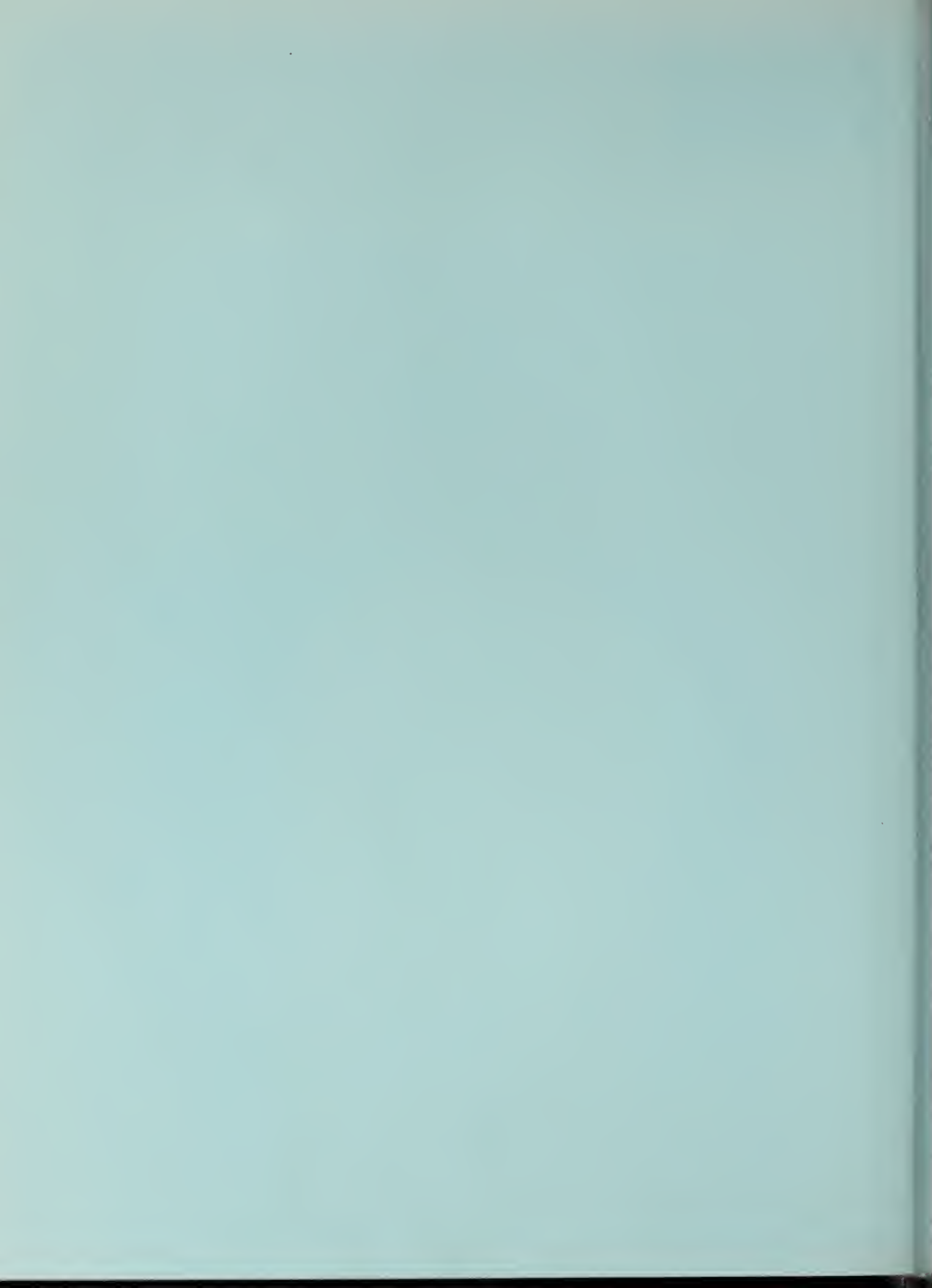
## ***Massachusetts 1996***

**Supplement to Advance Data BIRTHS 1996**

***Massachusetts Department of Public Health  
Bureau of Family and Community Health, Office of Statistics and Evaluation  
Bureau of Health Statistics, Research and Evaluation***

***May 1998***

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# ***Adolescent Births: A Statistical Profile***

***Massachusetts  
1996***

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William D. O'Leary, Secretary of Health and Human Services  
Howard K. Koh, MD, MPH, Commissioner of Public Health

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May 1998



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To obtain additional copies of this report, contact the OSE secretary at:

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TDD/TTY: (617) 624-5992 (Office of Children with Special Health Care Needs)

or

TDD/TTY: (617) 624-6001 (MDPH main number)

## Foreword

### **Changes in birth data collection affecting information in *Adolescent Births: A Statistical Profile, Massachusetts 1996* \***

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In 1996, Massachusetts implemented a major revision to the birth certificate form. At the same time, Massachusetts maternity hospitals began using a new Electronic Birth Certificate (EBC) system. As a result, future years of Massachusetts natality data will afford public health researchers, program planners, the health care community, and the public with vastly expanded information that more accurately reflects their needs and the times. However, the transition period created a significant impact on several elements of the 1996 data year. As a result, not all elements can be compared precisely with the data published in previous editions of this report.

This year's publication, *Adolescent Births: A Statistical Profile, Massachusetts 1996*, seeks to present, as closely as possible, natality data consistent with 1995 and previous years. Future publications of *Adolescent Births: A Statistical Profile* will be presented with the new format and will use the new data elements now available. For this publication, various items in the 1996 dataset were recoded for consistency with the 1995 format. The most significant inconsistencies between 1996 and previous years include the following:

*Adequacy of Prenatal Care:* The 1996 revised birth certificate collects data for the calculation of the Kessner Index in a different manner. From 1986 to 1995, data elements for use in calculating the adequacy index were as follows: Month of Pregnancy Prenatal Care Began (coded as 1-9) and Number of Prenatal Visits, adjusted by Gestational Age for premature infants. Hospitals were required to calculate the Month of Pregnancy from data available in medical and prenatal records. In 1996, the data elements for use in calculating the adequacy index are Month of Pregnancy Prenatal Care Began (1-9) and Number of Prenatal Visits, adjusted by Clinical Estimate of Gestation for premature infants. But, rather than have individual hospitals make determinations of Month of Pregnancy, the new birth certificate asks hospitals to report the precise Date of First Prenatal Care Visit. This change dramatically increases the consistency of data collection across facilities and yields a more standardized calculation of Month of Pregnancy Prenatal Care Began. Rather unexpectedly, however, Month of Pregnancy Prenatal Care Began showed a significant decline in first trimester visits when Date of First Visit determined the month as opposed to hospital reporting of Month. When comparing the adequacy index for 1995 and 1996, there is almost universal decline in state and hospital adequacy rates. **This decline is unlikely to reflect a significant actual decline, but rather a data adjustment due to a more accurate data collection method used in 1996.**

*Unknown rates:* The 1996 data year has a significantly higher rate of "unknown values" for some variables than in previous years. The implementation of the new EBC and the new birth certificate items proved to be a formidable task. The manpower and other resources involved in streamlining the system were enormous, and hospitals, without exception, were obligated to make significant changes in their procedures and data collection activities to accommodate the new data reporting requirements. The birth certificate system was greatly expanded, not only to

increase data collection, but also to serve as the primary surveillance dataset for multiple agencies and programs that previously provided separate data collection instruments to Massachusetts facilities. Even though the birth certificate was expanded, the number of times a hospital was required to report similar information to different agencies was reduced. However, a "grace period" was afforded hospitals to adjust to the new requirements, and routine data quality efforts with the facilities were suspended for approximately six months while procedural and computer systems issues were resolved. As a result, the "unknowns" for many items were not as stringently queried and validated for the early part of 1996.

*Payor Source:* The 1996 birth certificate significantly changes the way prenatal and delivery method of payment data is collected. Particularly striking are the differences between 1995 and 1996 in the categories "Blue Cross" and "HMO." In the past, hospitals were provided with a checklist that forced a choice between the two categories (and various others). In 1996, hospitals could choose both. The algorithm to translate the new payor source responses to the 1995 format may not accurately reflect the category hospitals might have chosen in the past. This report places all Blue Cross/Managed Care responses into the HMO category and all Blue Cross/non-Managed Care responses into the Blue Cross category. It is likely that, in the past, many hospitals chose "Blue Cross" when a Blue Cross/HMO payment source was given, when in fact the desired response would have been HMO.

*Population Data:* Population data used in this publication are based on revised estimates produced by the Massachusetts Institute for Social and Economic Research in June 1997. Crude birth rates, teen birth rates, and other age-specific birth rates for the years 1991 to 1995 are different from previously published rates for those years because of revisions made to the MISER estimates. Birth rate data from this year's publication may not be compared with data from previously published reports.

We apologize for any inconvenience these changes may cause. Ultimately, we feel these modifications will greatly enhance the quality, completeness, depth, and utility of the birth certificate data. We are indebted to the Bureau of Health Statistics, Research and Evaluation for this explanatory foreword.

\* Adapted from the Technical Foreword in *Advance Data: Births 1996*.



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# Executive Summary

## Introduction

*Adolescent Births: A Statistical Profile, Massachusetts, 1996* is a supplement to the publication *Advance Data BIRTHS 1996*, and presents selected annual statistics and trend data on births among adolescent women in Massachusetts, as well as comparisons with national data. The four sections cover: demographic and birth characteristics and teen birth trends for the state as a whole; birthweight, gestational age, adequacy of prenatal care, infant mortality, and smoking during pregnancy; teen birth rates and birth characteristics for each of the 26 communities with the highest number of teen births in 1996; teen birth characteristics for each of the 351 Massachusetts communities and for each of the 27 Community Health Network Areas (CHNAs). Teen births refer to births to resident Massachusetts women under 20 years old, unless specified otherwise. Massachusetts data are from the Registry of Vital Records and Statistics, Massachusetts Department of Public Health (MDPH). United States data are from the Centers for Disease Control and Prevention, National Center for Health Statistics (NCHS).

Overall, Massachusetts continues to have a low birth rate among women ages 15-19 relative to most other states and the nation as a whole.<sup>1</sup> However, some Massachusetts communities have teen birth rates that are higher than the national rate. Moreover, there are still disparities across race/Hispanic ethnicity subgroups in relation to low birthweight prevalence and adequacy of prenatal care. The data presented in this profile are intended to present information that will assist those planning programs, provide evaluators and researchers with reference measures, and assist policy makers in their efforts to address adolescent health issues.

## Summary

### I. Statewide Demographic and Birth Characteristics

#### Number and Percentage of Births to Women under Age 20

- ✓ In 1996, 5,849 infants were born to women under age 20, a decline of 258 births from the previous year. The number of teen births has consistently declined over seven years. Since its peak in 1989, the number of births to teens has declined by 24.4%, whereas the number of births to all women in Massachusetts declined by 12.2%.
- ✓ The 1996 percentage of all Massachusetts births that were to women under age 20 was 7.3%. Massachusetts continues to have one of the lowest percentages in the nation and is well below the national 1996 percentage of 12.9%.<sup>1</sup>

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<sup>1</sup> National Center for Health Statistics, U.S. Department of Health and Human Services.

### **Birth Rates among Women Ages 15-19**

- ✓ The 1996 Massachusetts teen birth rate was 32.6 births per 1,000 women ages 15-19. This rate has declined 9.2% since 1989, when it was at its highest point (35.9). The Massachusetts teen birth rate continues to be considerably lower than the national teen birth rate which is also declining. The 1996 Massachusetts rate was 40.4% lower than the 1996 national rate of 54.7

### **Age Distribution of Teen Mothers**

- ✓ The overall distribution of teen births (births to women under age 20) by mother's age has varied little in the past five years, with 18 to 19 year old women accounting for just over 60% of all teen births. In 1996, over one-third (37.3%) of all teen births were among 15-17 year olds, and 1.9% were among teens under age 15.

### **Race/Hispanic Ethnicity Distribution of Teen Births**

- ✓ In 1996, 2,952 (50.5%) of all teen births were to white non-Hispanic mothers; 1,722 (29.4%) were to Hispanic mothers; 810 (13.8%) were to black non-Hispanic mothers; and 164 (2.8%) were to Asian mothers.

### **Mother's Place of Birth**

- ✓ About one out of every five (21.4%) teen mothers in 1996 was born outside the fifty United States and D.C.; among older mothers (20 years and older), there was a slightly lower percentage (19.2%).
- ✓ The percentage of mothers born outside the U.S. varied by race/Hispanic ethnicity within each maternal age. Among teen births, the majority of black non-Hispanic mothers were born in the U.S. (86.7%) in contrast to Asian mothers, the majority of whom were born outside the U.S. (85.3%). A similar pattern was seen among older mothers. Among Hispanic teen mothers, about half were born outside the U.S. (49.5%), compared with almost three-quarters of older Hispanic mothers who were born outside the U.S. (73.4%).

### **Previous Live Births**

- ✓ In 1996, 17.9% of births to teens were to mothers with at least one prior live birth; 3.0% of teen births were to mothers with two or more prior live births. These percentages showed little change from 1995 (18.0% and 3.2%, respectively).
- ✓ The percentage of older teen mothers (18-19 years) who had at least one prior live birth continued to decline slightly, from 23.1% in 1995 to 22.7% in 1996. There was little change in the percent of multiparous mothers among very young teens (12-17 years) (10.0% in 1995 to 10.3% in 1996).



## **Prenatal Care Payment Source**

- ✓ The percentage of teen mothers whose prenatal care was supported through public funds was 68.7%, virtually unchanged from 1995 (68.9%). In contrast, only 20.4% of women 20 and older had their prenatal care supported through public funds in 1996 (a slight decrease from the 1995 figure, 21.6%).

## **Marital Status**

- ✓ Of all teen women giving birth in 1996, 90.3% were unmarried. The percentage of births to unmarried teens has been growing steadily since 1980 when it was 56.9%. This trend is reflected among births to women age 20 and older as well; the percentage of births to unmarried women increased from 10.7% in 1980 to 20.4% in 1996.

## **In-Hospital Paternity Acknowledgment**

- ✓ In-hospital paternity acknowledgment among teens increased from 54.2% in 1995 to 62.8% in 1996. Paternity acknowledgment occurred at a lower rate among unmarried teens than among unmarried adults; however, both groups experienced sizeable increases in paternity acknowledgment in 1996. Paternity acknowledgment among births to adults increased from 60.2% in 1995 to 67.1% in 1996.
- ✓ The percentage of paternity acknowledgment for births to older unmarried teens (ages 18-19) increased from 57.1% in 1995 to 65.0% in 1996, while the corresponding percentage among younger unmarried teen women (ages 12-17) increased from 50.0% in 1995 to 59.7% in 1996.
- ✓ Paternity acknowledgment varied widely by race/Hispanic ethnicity, ranging among women of all ages from a high of 73.8% among white, non-Hispanic unmarried mothers to a low of 46.2% among Asian unmarried mothers. However, paternity acknowledgment increased from 1995 among all race/Hispanic ethnic groups (data not shown).

## **In-Hospital Paternity Acknowledgment and Father's Age**

- ✓ Among all unmarried teen births with acknowledged paternity, 57.1% of the fathers were age 20 and older, and 12.7% were over age 25.
- ✓ Among unmarried teen mothers ages 16-17, 41.8% of the named fathers were 20 and older, a decrease of 5.6% from 1995. For 12-15 year old unmarried mothers, 23.4% of named fathers were 20 and older, a decrease of 17.0% from the 1995 percentage, 28.2%.



## ***II. Birth Outcomes and Prenatal Care***

### **Low Birthweight and Gestational Age**

- ✓ The overall percentage of low birthweight (LBW) births to teen mothers increased slightly, from 8.6% to 9.4% between 1995 and 1996. Among teen births to black non-Hispanic women, the LBW percentage increased from 10.0% in 1995 to 14.9% in 1996, while the percentage for Asian women declined from 18.4% to 11.6% (a difference of 11 births). The level for the Hispanic group showed little change (10.0% vs. 10.7%).
- ✓ Low birthweight among teen births is 51.6% higher than it was for adult women (9.4% vs. 6.2%). This ratio varies by race/Hispanic ethnicity. The percentage low birthweight among births to black non-Hispanic teens in 1996 was 14.9%, compared with 11.1% low birthweight among births to black non-Hispanic adults. While low birthweight among white non-Hispanic teens was 24.6% higher than for adult white non-Hispanic women (7.1% vs. 5.7%), Asian teens had almost twice the percentage low birthweight than that of adult Asian women.
- ✓ The incidence of preterm birth continues to be higher among teen births than among births to older women (9.6% vs. 6.9%). Preterm birth among teen births was more common among infants of black non-Hispanic, and Hispanic teens (12.3% and 11.1%, respectively) than among infants of white non-Hispanic teens (9.6%).

### **Prenatal Care**

- ✓ In 1996, the overall percentage of teen mothers who had received adequate prenatal care (first trimester registration and at least nine prenatal visits) was 59.6%, a decline from the previous year which was seen for all teen births and for all race/Hispanic ethnicity groups. This decline may be due, in part, to a change in the method used to calculate the adequacy index (see Foreword for explanation).
- ✓ In 1996, 59.6% of teen mothers had adequate prenatal care; 81.9% of adult mothers (20 years and older) had received adequate prenatal care.
- ✓ In 1996, 64.0% of teen mothers received prenatal care starting in the first trimester; 85.5% of mothers 20 years and older started in the first trimester.

### **Cesarean Sections**

- ✓ In 1996, cesarean sections occurred less frequently among teen births (12.4%) than among births to women ages 20 and older (20.3%).

### **Breastfeeding**

- ✓ The percentage of teen mothers indicating either that they were breastfeeding their infant during their hospital stay or that they intended to breastfeed increased from 31.9% in 1990 to 48.0% in 1996.

- ✓ Overall, the percentage of teen mothers (48.0%) who were breastfeeding or intended to breastfeed was lower than the percentage among mothers age 20 and older (66.5%).

### **Infant Mortality**

- ✓ In Massachusetts, infant mortality rates (IMR) have declined since 1990 for both teen births and births to older women. However, the IMR declined more slowly among births to teens (down 9.2% since 1990) than among births to older women (down 27.3% since 1990).
- ✓ The IMR for Massachusetts teen births in 1995 was 26.9% lower than the IMR for U.S. teen births (7.9 deaths per 1,000 1995 live births vs. 10.8). In addition, the IMR is declining at a faster rate in Massachusetts compared to the nation for births to teen women. Between 1987 and 1995, the IMR among teen births declined 31.3% in Massachusetts compared to a decline of 24.5% for the U.S.
- ✓ Overall, the IMR was consistently higher among births to teens than among births to older women. The IMR for infants born in 1995 was 7.9 deaths per 1,000 live births to teen women and 4.8 for births to older women. When broken out by race/Hispanic ethnicity, however, the trend is less consistent; in 1994 and 1995, the IMR among births to black non-Hispanic teen women was lower than among older women.
- ✓ In 1994, unlike the previous 7 years, the Massachusetts IMR among black teens dropped below that of white teens (Hispanics are included in both race groups). In 1995, the IMR among both white and black teen mothers dropped to the equivalent IMR of 7.8 infant deaths per 1,000 births.
- ✓ The IMR among normal birthweight infants (2,500 grams or more) was nearly twice as high for births to teen mothers as for births to adult mothers (3.1 vs. 1.7). However, the risk of infant mortality increases as birthweight declines, and this effect is independent of maternal age.

### **Smoking during Pregnancy**

- ✓ As in 1995, more teen mothers smoked during pregnancy than adult mothers in 1996 (23.1% vs. 12.4%). Between 1995 and 1996, the percentage of teen mothers who smoked during pregnancy increased from 21.5% to 23.1%, while the percentage of adult mothers who smoked decreased slightly from 12.9% to 12.4%.
- ✓ Among teen mothers, white non-Hispanics had the highest prevalence of smoking (34.0%), over two and a half times that of the next highest race/ethnicity group, black non-Hispanics, at 13.0%.
- ✓ Overall, the less mothers smoked *prior* to pregnancy, the more likely they were to quit or reduce their level of smoking *during* pregnancy. This pattern was found among both teen and non-teen age groups.

### **III. Birth Characteristics for 26 Massachusetts Communities with Highest Teen Birth Numbers**

Statewide data can mask variation among individual communities. In this section, statistics are given for the 26 Massachusetts communities with the greatest number of births among teens in 1996.

#### **Community Birth Rates**

- ✓ *Due to revised estimation of the population count for 1991-1995, the teen birth rates for these years have been re-calculated and differ from rates published in previous reports. Therefore, teen birth rates published in this report should not be compared to those found in previous reports.* The five Massachusetts communities with the highest teen birth rates in 1996 were Holyoke (102.6 births per 1,000 Holyoke women ages 15-19 years), Chelsea (93.8), Lawrence (83.7), Springfield (82.5), and Brockton (74.4). In 1996, about one in every five (21.3%) infants born among women ages 15-19 years in Massachusetts occurred in these five communities. Twenty-four out of the 26 communities with the greatest number of teen births in 1996 were also among the top 25 in 1995.

#### **Race/Hispanic Ethnicity Distribution of Births**

- ✓ In the communities with the four highest teen birth rates, the majority of teen births in 1996 were to Hispanic mothers. The percentage of younger teen mothers (< 18 years) who were Hispanic was 88.1% in Holyoke, 82.2% in Lawrence, 71.1% in Chelsea, and 52.3% in Springfield. Statewide, the largest proportion of younger teen births were to white non-Hispanic mothers (43.8%), followed by Hispanic (34.2%), black non-Hispanic (15.0%) and Asian (3.6%) mothers.

#### **Low Birthweight (LBW)**

- ✓ Among the 26 communities with the greatest number of 1996 teen births, the five communities with the highest percentages of LBW among teen births were Boston (14.2%), Fitchburg (13.7%), Southbridge (12.8%), Worcester (12.3%), and Lowell (11.5%).

#### **Adequacy of Prenatal Care**

- ✓ The six communities with the lowest percentages of adequate prenatal care for teen mothers were Lawrence (36.5%), Cambridge (43.2%), Methuen (50.0%), Brockton (51.7%), Lowell (52.8%), and Chelsea (52.8%).
- ✓ In 1996, Lawrence (14.6%), Taunton (12.4%), Springfield (12.2%), Lowell (11.9%), and Chelsea (11.2%) had the highest percentages of teen mothers reported to receive inadequate or no prenatal care. However, the actual community-specific numbers of teen mothers with inadequate or no prenatal care are small, causing wide fluctuations in percentages from year to year.



### **Previous Live Births (Parity)**

- ✓ The statewide percentage of births to teen mothers who had at least one previous live birth was 18.0%. Among the 26 communities with the greatest number of teen births, the percentage of births among teens who had at least one previous live birth was highest in Holyoke (36.5%), Lynn (30.9%), Fitchburg (27.5%), Springfield (26.5%), and Lowell (26.1%).

### **Expected Educational Attainment**

- ✓ Statewide, 25.6% of teen births were to mothers who were one or more grades behind the expected grade for their age in 1996. Among the 26 communities with the greatest number of teen births, the percentage of teen mothers who were one or more school grades behind was highest in Holyoke (39.3%), Haverhill (36.2%), Southbridge (35.9%), Chicopee (35.4%), and Fitchburg (35.0%).

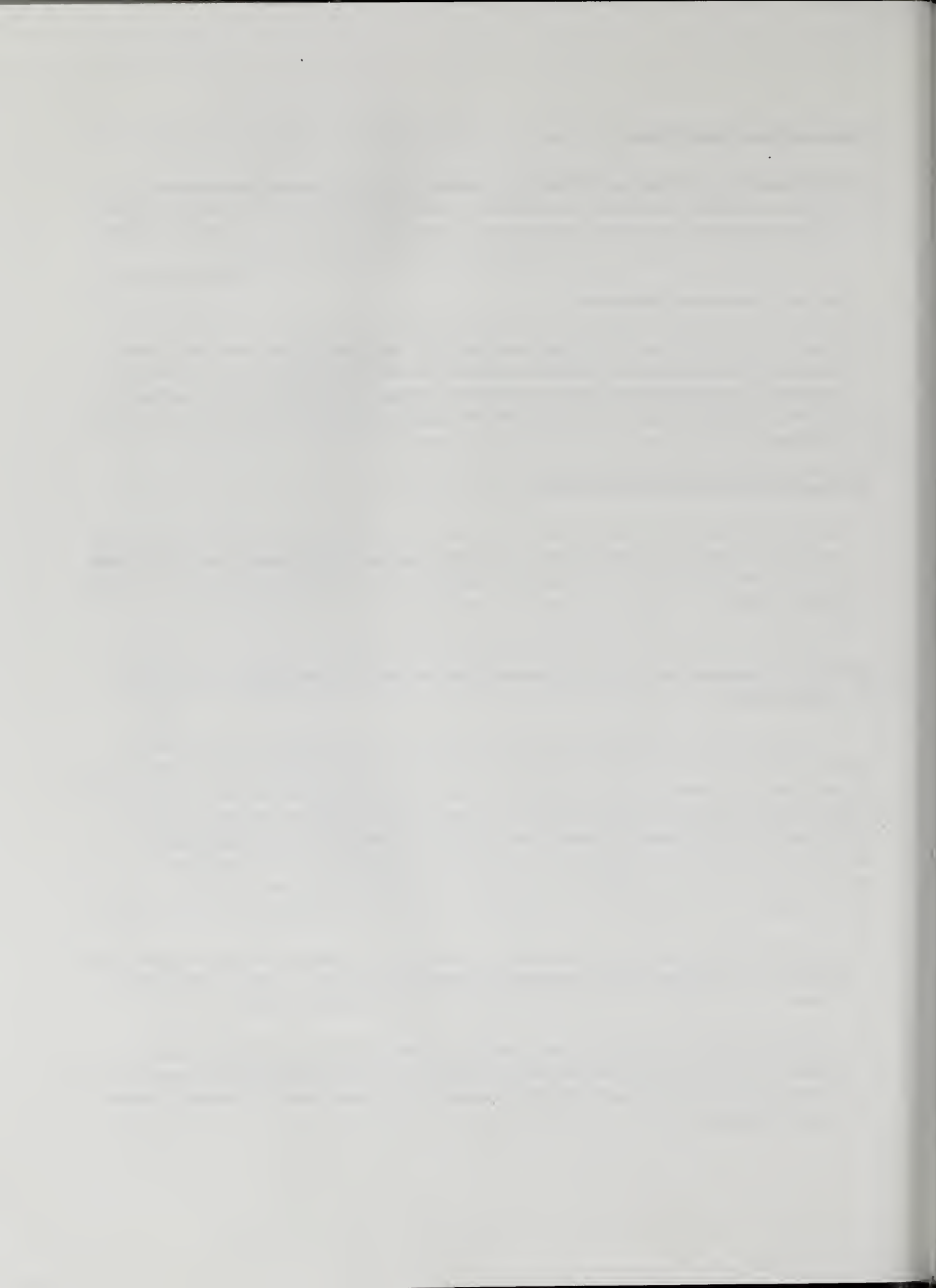
### **In-Hospital Paternity Acknowledgment**

- ✓ In 1996, the state percentage of teen births for which paternity was acknowledged in-hospital was 62.8%. Boston (45.6%), Fitchburg (52.2%), Attleboro (54.8%), Springfield (55.3%) and Lynn (55.9%) had the lowest percentages of paternity acknowledgment among the 26 selected communities.

## ***IV. Birth Characteristics for all 351 Communities and the 27 Community Health Network Areas (CHNA)***

In this section, the following statistics are presented for each of the 351 cities/towns in Massachusetts and for each of the 27 CHNAs: the number of all births, the number of teen births by mother's age (< 18 years and < 20 years), the number of births among teen mothers (< 20 years) who started prenatal care in the first trimester, and the number whose prenatal care was paid for with public funds. The Community Health Network Areas are aggregations of all Massachusetts cities and towns into 27 groups for the purpose of tracking health status and implementing health improvement efforts. The community groupings were modified in 1997 and the data here reflect the new groupings (see Appendix for most recent CHNA city/town groupings).

- ✓ In 1996, the Greater Springfield Community Health Network Area had the highest percentage of births that were to teens (15.0%) (double the statewide percentage of 7.3%), followed by the Greater Holyoke Area (14.8%) and the Greater New Bedford Area (13.5%).
- ✓ In 1996, the lowest percentage of teen mothers receiving prenatal care starting in the first trimester (51.3%) was found in the Greater Lawrence Area. The Malden/Medford/Melrose Area had the next lowest percentage (53.2%), followed by the Greater Lowell Community Health Network (56.1%).



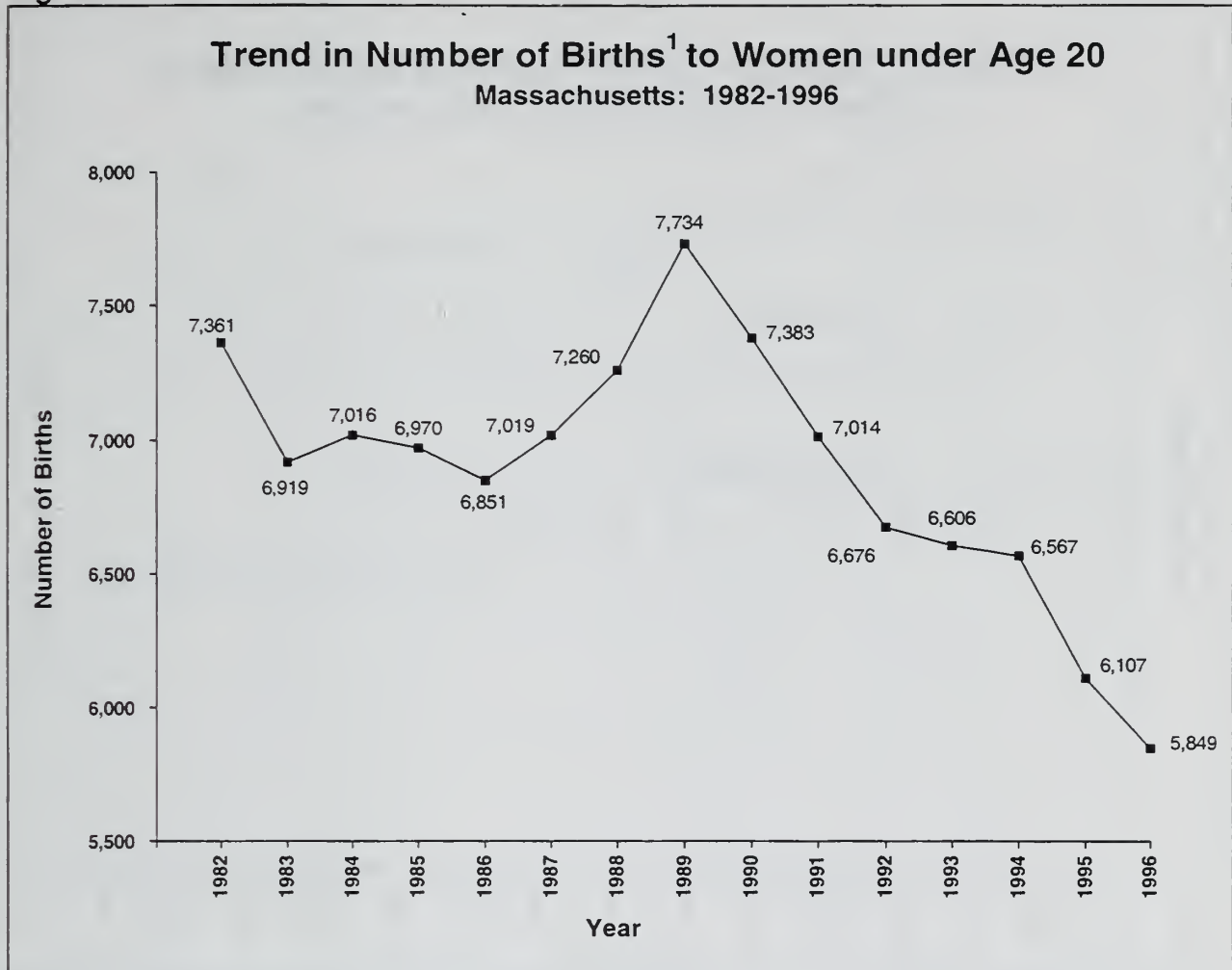


I.

*Demographic  
and Birth  
Characteristics*



Figure 1.

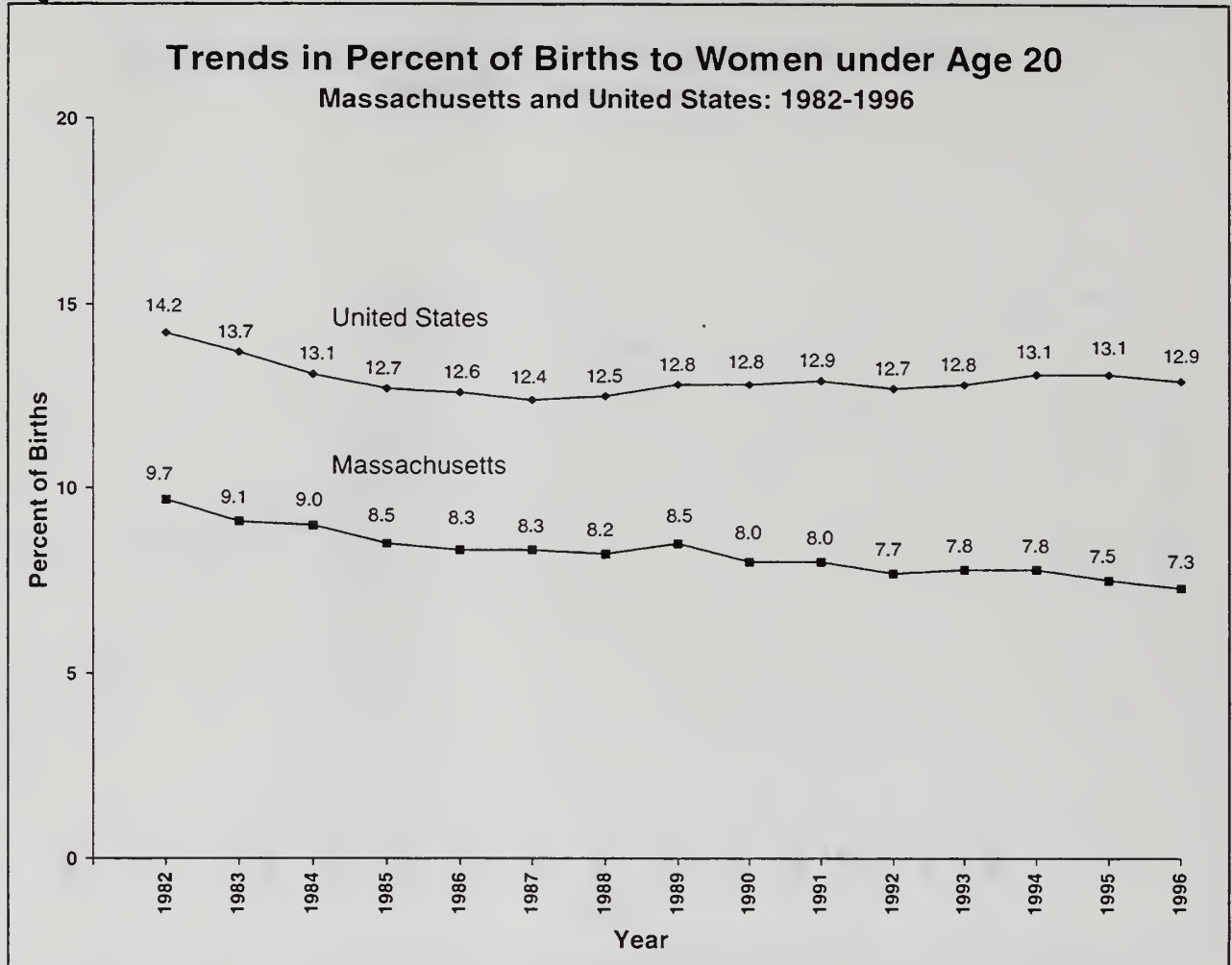


Source: Registry of Vital Records and Statistics, MDPH, 1982-1996.

<sup>1</sup> Births are resident live births.

- In 1996, 5,849 infants were born to women under age 20, a decline of 258 births from the previous year.
- The number of teen births has consistently declined over seven years. Since its peak in 1989, the number of births to teens has declined by 24.4%, whereas the number of births to all women in Massachusetts declined by 12.2% (data not shown).

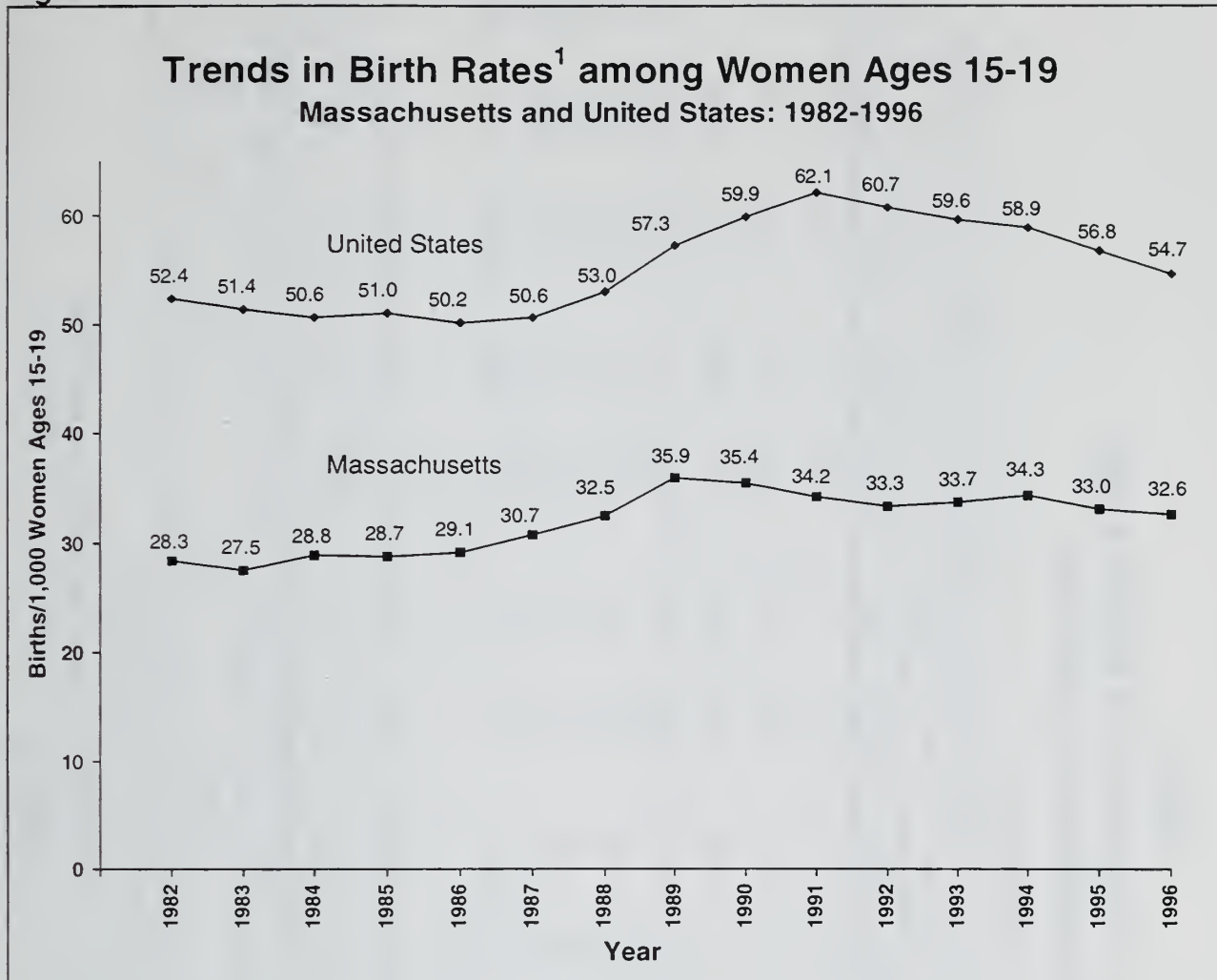
Figure 2.



Sources: Registry of Vital Records and Statistics, MDPH, 1982-1996; National Center for Health Statistics, 1982-1996.

- In 1996, 7.3% of all births in Massachusetts were to women under age 20, continuing an overall downward trend throughout the 1980's and 1990's.
- The 1996 Massachusetts percentage of births that were to women under age 20 (7.3%) is well below the 1996 national percentage of 12.9%.

Figure 3.



Sources: Registry of Vital Records and Statistics, MDPH, 1982-1996; National Center for Health and Statistics, 1982-1996.

<sup>1</sup> Number of births per 1,000 women ages 15-19.

- Due to the recently revised estimation of the Massachusetts population for the years 1991-1996 by the Massachusetts Institute for Social and Economic Research, the teen birth rates (births per 1,000 women ages 15-19) presented here differ from the 1991-1995 rates published in previous editions of this report.
- The 1996 Massachusetts teen birth rate was 32.6 births per 1,000 women ages 15-19. This rate has declined 9.2% since 1989, when it was at its highest point (35.9).
- The Massachusetts teen birth rate continues to be considerably lower than the national teen birth rate, which is also declining. The 1996 Massachusetts rate was 40.4% lower than the 1996 national rate of 54.7.



**Table 1.**  
**Trends in Teen Births by Mother's Age**  
**Massachusetts: 1991-1996**

Mother's Age	1991		1992		1993		1994		1995		1996	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>12-19</b>	7,014	100.0	6,676	100.0	6,606	100.0	6,567	100.0	6,107	100.0	5,849	100.0
<b>12-13</b>	20	0.3	18	0.3	16	0.2	24	0.4	19	0.3	11	0.2
<b>14</b>	102	1.5	103	1.5	121	1.8	131	2.0	98	1.6	80	1.4
<b>15</b>	372	5.3	341	5.1	360	5.4	371	5.6	356	5.8	342	5.8
<b>16</b>	758	10.8	782	11.7	741	11.2	822	12.5	721	11.8	687	11.7
<b>17</b>	1,391	19.8	1,327	19.9	1,259	19.1	1,244	18.9	1,203	19.7	1,115	19.1
<b>18</b>	1,910	27.2	1,753	26.3	1,872	28.3	1,758	26.8	1,648	27.0	1,666	28.5
<b>19</b>	2,461	35.1	2,352	35.2	2,237	33.9	2,217	33.8	2,062	33.8	1,948	33.3

Source: Registry of Vital Records and Statistics, MDPH: 1991-1996.

- In 1996, 61.8% of all teen births were to women ages 18-19 years, 36.6% were to women ages 15-17 years, and 1.6% were to women under age 15.
- The age distribution of teen women giving birth has changed very little in the last six years, with the proportion of teen births occurring among women under age 18 remaining below 40% (38.2% in 1996).
- The number of teen births to women under age 15 has decreased dramatically two years in a row, from 155 to 91 between 1994 and 1996.

**Table 2.**  
**Trends in Teen Births<sup>1</sup> by Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 1991-1996**

Mother's Race/Ethnicity	1991		1992		1993		1994		1995		1996	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>Total</b>	7,014	100.0	6,676	100.0	6,606	100.0	6,567	100.0	6,107	100.0	5,849	100.0
<b>White*</b>	3,836	54.7	3,547	53.1	3,450	52.2	3,303	50.3	3,209	52.5	2,952	50.5
<b>Black*</b>	1,059	15.1	1,058	15.8	1,003	15.2	997	15.2	865	14.2	810	13.8
<b>Hispanic</b>	1,769	25.2	1,737	26.0	1,809	27.4	1,950	29.7	1,727	28.3	1,722	29.4
<b>Asian*</b>	194	2.8	178	2.7	180	2.7	188	2.9	163	2.7	164	2.8
<b>Other*</b>	145	2.1	147	2.2	156	2.4	126	1.9	134	2.2	155	2.7
<b>Unknown</b>	11	0.2	9	0.1	8	0.1	3	**	9	0.1	46	0.8

Source: Registry of Vital Records and Statistics, MDPH: 1991-1996.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Births to women ages 12-19.

- The majority of births to Massachusetts teen women (< 20 years of age) continue to be to white non-Hispanic women (50.5%).
- Between 1991 and 1996, the proportion of teen births that were to white non-Hispanic women decreased overall from 54.7% to 50.5%, whereas the proportion that were to Hispanic teen women increased overall from 25.2% to 29.4%. The proportions for other race/ethnic groups showed little change during this period.

**Table 3.**  
**Teen Births by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1996**

Mother's Age	Total		White*		Black*		Hispanic		Asian*		Other*		Unknown	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
< 20	5,849	100.0	2,952	100.0	810	100.0	1,722	100.0	164	100.0	155	100.0	46	100.0
18-19	3,614	61.8	1,973	66.8	475	58.6	957	55.6	84	51.2	97	62.6	28	60.9
16-17	1,802	30.8	835	28.3	257	31.7	591	34.3	60	36.6	47	30.3	12	26.1
12-15	433	7.4	144	4.9	78	9.6	174	10.1	20	12.2	11	7.1	6	13.0

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Percents are based on column totals. Percentages may not add up to 100 due to rounding.

- As seen in previous years, a lower proportion of white non-Hispanic teen births were to women under age 18 (33.2%), than among black non-Hispanic, Hispanic, or Asian teen births (41.4%, 44.4%, and 48.8%, respectively).
- The proportion of births that were to younger teens (under age 18) declined from the previous year among black non-Hispanic (from 46.7% to 41.3%) and Hispanic teen births (from 47.9% to 44.4%), and increased slightly among Asian teen births (46.1% to 48.8%) (1995 data not shown).
- The proportions of births to black/non-Hispanic (9.6%), Hispanic (10.1%) and Asian (12.2%) women under age 16 are nearly to more than twice as high as the proportion among white/non-Hispanic women (4.9%).

**Table 4.**  
**Births by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1996**

Mother's Race/Ethnicity	Under 18 Years		18 to 19 Years		Under 20 Years		20 Years & Older		All Ages <sup>1</sup>	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>Total Births</b>	2,235	100.0	3,614	100.0	5,849	100.0	74,313	100.0	80,164	100.0
<b>White*</b>	979	43.8	1,973	54.6	2,952	50.5	58,762	79.1	61,716	77.0
<b>Black*</b>	335	15.0	475	13.1	810	13.8	4,663	6.3	5,473	6.8
<b>African-American</b>	279	12.5	372	10.3	651	11.1	2,555	3.4	3,206	4.0
<b>West Indian</b>	18	0.8	35	1.0	53	0.9	519	0.7	572	0.7
<b>Haitian</b>	16	0.7	31	0.9	47	0.8	830	1.1	877	1.1
<b>Other Black</b>	22	1.0	37	1.0	59	1.0	759	1.0	818	1.0
<b>Hispanic</b>	765	34.2	957	26.5	1,722	29.4	6,024	8.1	7,746	9.7
<b>Puerto Rican</b>	605	27.1	671	18.6	1,276	21.8	2,802	3.8	4,078	5.1
<b>Dominican</b>	72	3.2	133	3.7	205	3.5	1,096	1.5	1,301	1.6
<b>Central Amer.</b>	46	2.1	73	2.0	119	2.0	959	1.3	1,078	1.3
<b>Other Hispanic</b>	42	1.9	80	2.2	122	2.1	1,167	1.6	1,289	1.6
<b>Asian*</b>	80	3.6	84	2.3	164	2.8	3,430	4.6	3,594	4.5
<b>Vietnamese</b>	15	0.7	22	0.6	37	0.6	561	0.8	598	0.7
<b>Cambodian</b>	36	1.6	28	0.8	64	1.1	417	0.6	481	0.6
<b>Other SE Asian</b>	13	0.6	4	**	17	0.3	148	0.2	165	0.2
<b>Chinese</b>	5	0.2	5	0.1	10	0.2	1,072	1.4	1,082	1.3
<b>Other Asian</b>	11	0.5	25	0.7	36	0.6	1,232	1.7	1,268	1.6
<b>Other*</b>	58	2.6	97	2.7	155	2.7	942	1.3	1,097	1.4
<b>Unknown</b>	18	0.8	28	0.8	46	0.8	492	0.7	538	0.7

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> "All Ages" includes mothers with unknown ages.

<sup>2</sup> Percentages are based on column totals. Percentages may not add up to 100 due to rounding.



- In 1996, 6.3% and 8.1% of births to non-teen mothers (ages 20 and older) were to black/non-Hispanic and Hispanic women, respectively. The proportions were much higher among teen births (13.8% for black/non-Hispanic women and 29.4% for Hispanic women).
- Women under the age of 18 giving birth in 1996 were less likely to be white non-Hispanic than women ages 18 and 19 giving birth (43.8% vs. 54.6%). Instead, there were higher proportions of births to black non-Hispanic and Hispanic women among births to women under age 18 than among births to women age 18-19 (15.0% and 34.2% compared to 13.1% and 26.5%, respectively).
- The largest ethnic minority group among teen mothers in 1996 was Puerto Rican, comprising 21.8% of all teen births and 74.1% of all teen births to Hispanic mothers.



Table 5.

# Births by Mother's Age, Place of Birth, and Race/Hispanic Ethnicity Massachusetts: 1996<sup>1</sup>

Mother's Race/Ethnicity	Under 20 Years			20 Years and Older				
	United States <sup>2</sup>		Other <sup>3</sup>	United States <sup>2</sup>		Other <sup>3</sup>		
	N	% <sup>4</sup>		N	% <sup>4</sup>			
Total Births	4,597	78.6	1,248	21.4	59,976	80.8	14,273	19.2
White*	2,851	96.7	98	3.3	54,611	93.0	4,098	7.0
Black*	702	86.7	108	13.3	2,704	58.0	1,957	42.0
African Amer.	640	98.3	11	1.7	2,484	97.2	71	2.8
West Indian	17	32.1	36	67.9	42	8.1	477	91.9
Haitian	12	25.5	35	74.5	21	2.5	809	97.5
Other Black	33	55.9	26	44.1	157	20.7	600	79.3
Hispanic	870	50.5	852	49.5	1,600	26.6	4,424	73.4
Puerto Rican	732	57.4	544	42.6	1,168	41.7	1,634	58.3
Dominican	53	25.9	152	74.1	87	7.9	1,009	92.1
Central Amer.	18	15.1	101	84.9	41	4.3	918	95.7
Other Hispanic	67	54.9	55	45.1	304	26.0	863	74.0
Asian*	24	14.7	139	85.3	279	8.2	3,144	91.8
Vietnamese	0	0.0	37	100.0	4	**	557	99.3
Cambodian	4	**	60	93.8	7	1.7	410	98.3
Other SE Asian	2	**	15	88.2	5	3.4	143	96.6
Chinese	5	50.0	5	50.0	118	11.0	954	89.0
Other Asian	13	37.1	22	62.9	145	11.8	1,080	88.2
Other*	114	73.5	41	26.5	414	43.9	528	56.1
Unknown	36	78.3	10	21.7	368	75.1	122	24.9

Source: Registry of Vital Records and Statistics, MDPH, 1996.

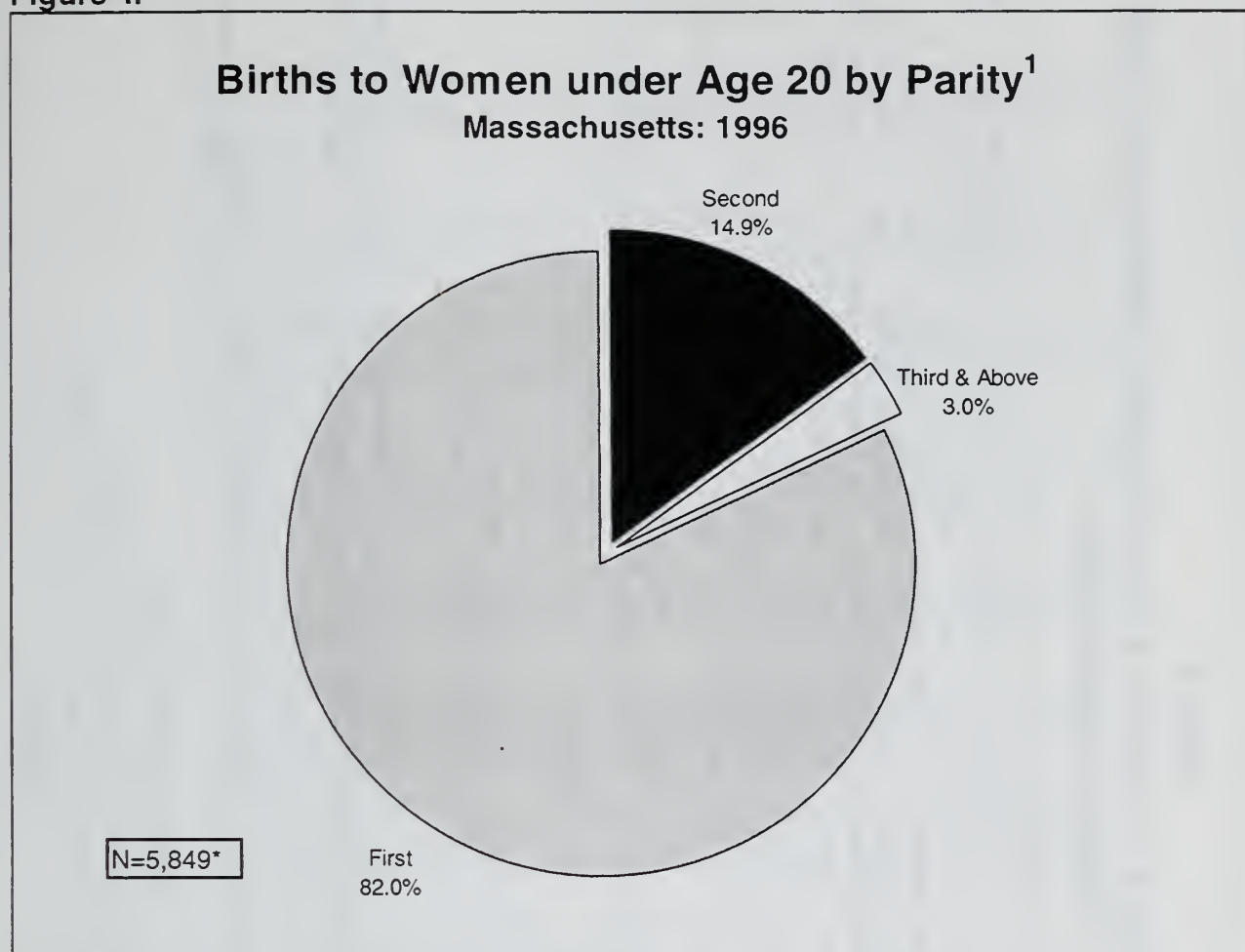
\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Due to an error in analysis of the data in 1995, 1996 figures from this table should not be compared with the previous year's data.<sup>2</sup> United States includes the 50 states and the District of Columbia.<sup>3</sup> Rest of world.<sup>4</sup> Percentages are based on known maternal country of origin; percentages are calculated on row totals within each age category.

- About one out of every five (21.4%) teen mothers in 1996 was born outside the fifty United States and DC; among older mothers (20 years and older), there was a slightly lower percentage (19.2%).
- The percentage of mothers born outside the U.S. varied by race/Hispanic ethnicity within each maternal age. Among teen births, the majority of black non-Hispanic mothers were born in the U.S. (86.7%) in contrast to Asian mothers, the majority of whom were born outside the U.S (85.3%). A similar pattern was seen among older mothers.
- Among Hispanic teen mothers, about half were born outside the U.S. (49.5%). In contrast, almost three-quarters of older Hispanic mothers were born outside the U.S. (73.4%).
- There was variation in the proportion born outside the U.S. across ethnicity subgroups as well. For example, among Hispanic mothers, Dominican and Central American women were more likely to have been born outside of the U.S. than Puerto Rican women, regardless of maternal age.

Figure 4.



Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Percentages are based on births with known parity.

<sup>1</sup> Parity is defined as number of live births including this birth.

- In 1996, 17.9% of births to teens were to mothers with at least one prior live birth; 3.0% of teen births were to mothers with two or more prior live births (the vast majority of second live birth deliveries, typically above 95%, are singletons). These percentages showed little change from corresponding 1995 data (18.0% and 3.2%, respectively).

**Table 6.**  
**Births to Multiparous<sup>1</sup> Mothers by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1996**

Multiparous Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>All Ages<sup>3</sup></b>	33,754	54.7	3,282	60.0	4,612	59.5	1,815	50.5	556	50.7	43	8.0	44,062	55.0
<b>20 +</b>	33,393	56.8	3,122	67.0	4,136	68.7	1,787	52.1	532	56.5	41	8.3	43,011	57.9
<b>&lt;20</b>	360	12.2	160	19.8	476	27.6	28	17.1	24	15.5	2	**	1,050	18.0
<b>18-19</b>	305	15.5	118	24.8	351	36.7	22	26.2	22	22.7	2	**	820	22.7
<b>12-17</b>	55	5.6	42	12.5	125	16.3	6	7.5	2	**	0	0.0	230	10.3

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Multiparous women have had at least one previous live birth.

<sup>2</sup> Percentages are based on the total number of births in each race/Hispanic ethnicity-age group (data not shown).

<sup>3</sup> "All Ages" includes mothers with unknown ages.

- The percentage of older teen mothers (ages 18-19) who had at least one prior live birth continued to decline slightly, from 23.1% in 1995 to 22.7% in 1996. The percentage of multiparous mothers among younger teens (12-17) changed very little, from 10.0 in 1995 to 10.3 in 1996 (1995 data not shown).
- Among teen mothers in 1996, Hispanic and black non-Hispanic women had the highest proportion of multiparous women, 27.6% and 19.8%, respectively.



**Table 7.**  
**Births by Mother's Race/Hispanic Ethnicity, Age,**  
**and Prenatal Care Payment Source**  
**Massachusetts: 1996**

Mother's Race/Ethnicity	12 to 17 Years		18 to 19 Years		Under 20 Years		20 Years & Older		All Ages <sup>1</sup>	
	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>
<b>Total Births<sup>3</sup></b>	2,220	100.0	3,596	100.0	5,816	100.0	74,038	100.0	79,856	100.0
<b>Public<sup>4</sup></b>	1,515	68.2	2,491	69.3	4,006	68.9	15,067	20.4	19,073	23.9
<b>Private<sup>5</sup></b>	557	25.1	863	24.0	1,420	24.4	53,119	71.7	54,539	68.3
<b>White*</b>	978	100	1,972	100.0	2,950	100.0	58,718	100.0	61,670	100.0
<b>Public</b>	532	54.4	1,216	61.7	1,748	59.3	7,876	13.4	9,624	15.6
<b>Private</b>	382	39.1	641	32.5	1,023	34.7	46,496	79.2	47,519	77.1
<b>Black*</b>	334	100.0	475	100.0	809	100.0	4,654	100.0	5,463	100.0
<b>Public</b>	244	73.1	333	70.1	577	71.3	2,218	47.7	2,795	51.2
<b>Private</b>	70	21.0	97	20.4	167	20.6	1,986	42.7	2,153	39.4
<b>Hispanic</b>	764	100.0	956	100.0	1,720	100.0	6,016	100.0	7,736	100.0
<b>Public</b>	635	83.1	808	84.5	1,443	83.9	3,714	61.7	5,157	66.7
<b>Private</b>	77	10.1	90	9.4	167	9.7	1,852	30.8	2,019	26.1
<b>Asian*</b>	80	100.0	84	100.0	164	100.0	3,428	100.0	3,592	100.0
<b>Public</b>	65	81.3	60	71.4	125	76.2	845	24.6	970	27.0
<b>Private</b>	12	15.0	19	22.6	31	18.9	2,300	67.1	2,331	64.9
<b>Other*</b>	58	100.0	96	100.0	154	100.0	940	100.0	1,094	100.0
<b>Public</b>	38	65.5	72	75.0	110	71.4	412	43.8	522	47.7
<b>Private</b>	16	27.6	16	16.7	32	20.8	427	45.4	459	42.0

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

<sup>1</sup> "All Ages" includes mothers with unknown ages.

<sup>2</sup> "N" includes births with known prenatal care payor source.

<sup>3</sup> Percentages are based on race/Hispanic ethnicity totals. Percentages for "Public" and "Private" do not add up to 100 because total includes Workers

Compensation, self pay, and free care (data not shown).

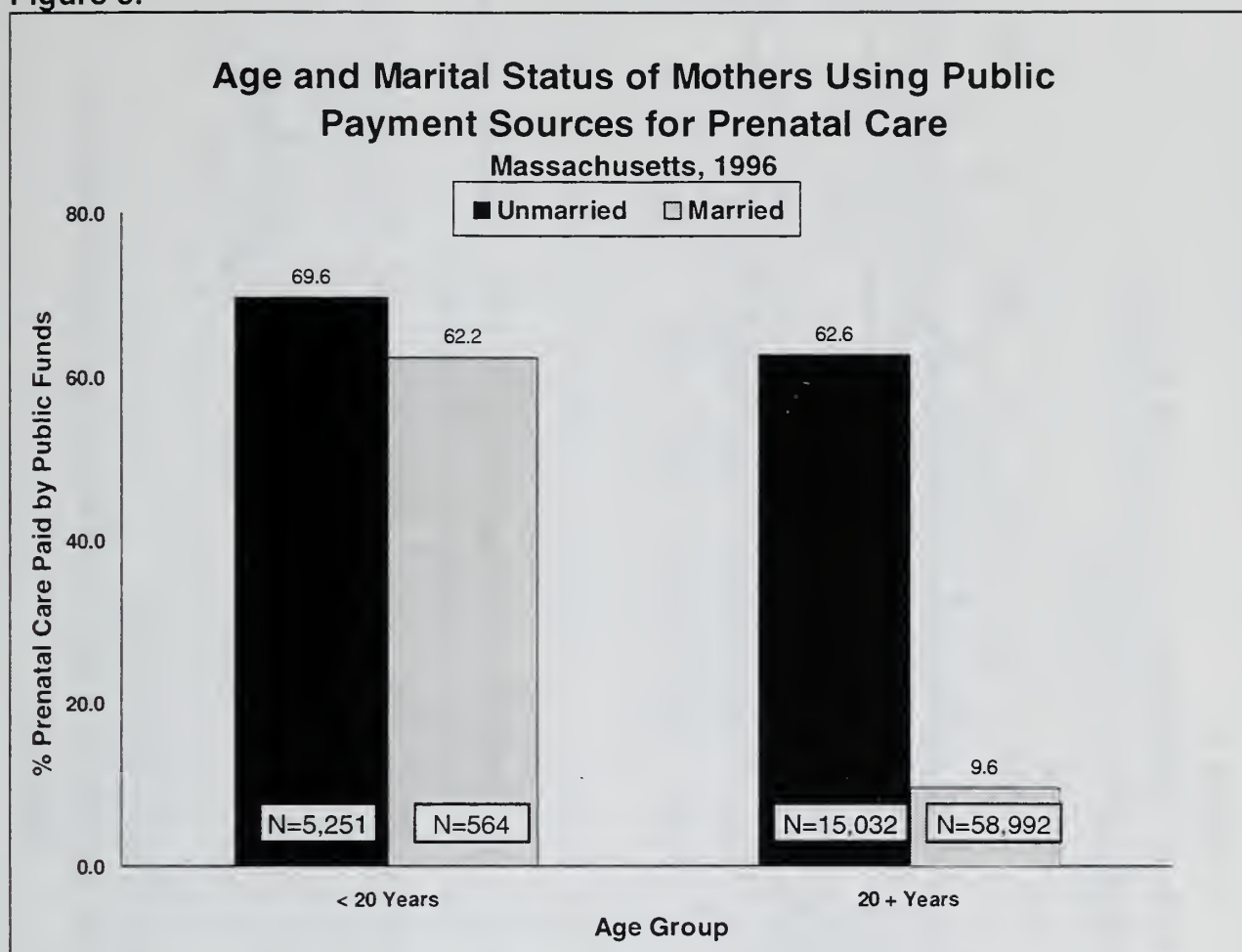
<sup>4</sup> Public: Medicaid, Medicare, Healthy Start and other government programs.

<sup>5</sup> Private: Blue Cross/Blue Shield, other commercial insurance, and HMO. "HMO" may include Medicaid recipients in managed care programs.



- The percentage of teen mothers whose prenatal care was supported through public funds was 68.7%, virtually unchanged from 1995 (68.9%). In contrast, only 20.4% of women 20 and older had their prenatal care supported through public funds in 1996 (a slight decrease from the 1995 figure, 21.6%).
- Among teen mothers, the percentage receiving publicly funded prenatal care varied by race/Hispanic ethnicity: 59.3% of white non-Hispanic teen mothers, 71.3% of black non-Hispanic teen mothers, 83.9% of Hispanic teen mothers, and 76.2% of Asian teen mothers received publicly funded prenatal care.
- There was less variation across race/Hispanic ethnicity groups among teens in the percentage of mothers receiving publicly funded prenatal care than among women ages 20 and older. Among teens, the difference between the highest and lowest proportions of mothers receiving publicly funded prenatal care (Hispanics and white non-Hispanics, respectively), was 24.6%, while among mothers 20 years and older, the corresponding difference was 48.3%.

Figure 5.



Source: Registry of Vital Records and Statistics, MDPH, 1996.

- In 1996, 69.6% of unmarried teen mothers and 62.2% of married teen mothers received publicly funded prenatal care. The unmarried teen figure was slightly higher than it was in 1995 (69.2%); the figure for married teens was slightly lower than it was in 1995 (64.0%). The contrast was much greater among adult mothers, with 62.6% of unmarried adult mothers having received publicly funded prenatal care and only 9.6% of married adult mothers having received publicly funded prenatal care. Both of these figures were lower than their corresponding 1995 numbers, 64.9% and 10.5%, respectively (1995 data not shown).

**Table 8.**  
**Trends in Births to Unmarried Mothers by Age of Mother**  
**Massachusetts: 1991-1996**

Unmarried Mother's Age	1991		1992		1993		1994		1995		1996	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>All Ages<sup>2</sup></b>	22,852	25.9	22,612	25.9	22,345	26.4	22,302	26.6	20,857	25.6	20,429	25.5
<b>20 +</b>	16,843	20.8	16,750	20.8	16,462	21.1	16,416	21.3	15,370	20.4	15,147	20.4
<b>&lt; 20</b>	6,009	85.7	5,862	87.8	5,883	89.1	5,886	89.6	5,487	89.9	5,282	90.3
<b>18-19</b>	3,561	81.5	3,462	84.3	3,515	85.5	3,433	86.4	3,210	86.5	3,145	87.0
<b>12-17</b>	2,448	92.6	2,400	93.4	2,368	94.8	2,453	94.6	2,277	95.0	2,137	95.6

Source: Registry of Vital Records and Statistics, MDPH, 1991-1996.

<sup>1</sup> Percentages are based on total number of births within each category.

<sup>2</sup> "All Ages" includes mothers with unknown ages.

- The 1996 percentage of all Massachusetts births that were to unmarried women showed virtually no change from 1995 (25.6% in 1995 to 25.5%). The peak year was 1994, with 26.6% of all births occurring among unmarried women.
- Among teens, the percentage of births that were to unmarried women rose slightly between 1995 and 1996, from 89.9% to 90.3%, continuing a steady increase over time.
- In 1996, 95.6% of births to mothers ages 12-17 were to unmarried women, compared with 95.0% in 1995 (data not shown).

**Table 9.**  
**Births to Unmarried Mothers by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1996**

Unmarried Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>All Ages<sup>1</sup></b>	11,150	18.1	3,267	59.7	4,668	60.3	653	18.2	511	46.6	180	33.5	20,429	25.5
<b>20+</b>	8,497	14.5	2,481	53.2	3,147	52.2	516	15.0	370	39.3	136	27.7	15,147	20.4
<b>&lt; 20</b>	2,653	89.9	786	97.0	1,521	88.3	137	83.5	141	91.0	44	95.7	5,282	90.3
<b>18-19</b>	1,701	86.3	455	95.8	816	85.3	61	72.6	86	88.7	26	92.9	3,145	87.0
<b>12-17</b>	952	97.2	331	98.8	705	92.2	76	95.0	55	94.8	18	100.0	2,137	95.6

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

<sup>1</sup> "All Ages" includes mothers with unknown ages.

- The overall percentage of births to unmarried mothers varied substantially by race/Hispanic ethnicity in 1996, as it has in previous years. Among births to women of all ages, 18.1% of white non-Hispanic women were unmarried, while 59.7% of black non-Hispanic, 60.3% of Hispanic women, and 18.2% of Asian women were unmarried.
- There is less variation in marital status by race/Hispanic ethnicity among teen mothers (< 20 years of age); 89.9% of white non-Hispanic teen mothers were unmarried, while 97.0% of black non-Hispanic, 88.3% of Hispanic, and 83.5% of Asian teen mothers were unmarried.



**Table 10.**  
**Trends in In-Hospital Paternity Acknowledgment<sup>1</sup> by Age of Unmarried Mother**  
**Massachusetts: 1991-1996**

Unmarried Mother's Age	1991		1992		1993		1994		1995		1996	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>All Ages<sup>2</sup></b>	10,708	46.9	10,874	48.1	11,329	50.7	11,904	53.4	12,223	58.6	13,195	66.0
<b>20+</b>	7,992	47.5	8,192	48.9	8,487	51.6	8,944	54.5	9,251	60.2	9,939	67.1
<b>&lt; 20</b>	2,716	45.2	2,682	45.6	2,842	48.3	2,960	50.3	2,972	54.2	3,256	62.8
<b>18-19</b>	1,664	46.7	1,631	47.1	1,812	51.6	1,785	52.0	1,833	57.1	1,999	65.0
<b>12-17</b>	1,052	43.0	1,051	43.8	1,030	43.5	1,175	47.9	1,139	50.0	1,257	59.7

Source: Registry of Vital Records and Statistics, MDPH, 1991-1996.

<sup>1</sup> Paternity acknowledgment: voluntary self-acknowledgment by fathers or acknowledgment through legal action. This table reflects data collected in hospitals, at time of birth only (see Glossary for further explanation).

<sup>2</sup> "All Ages" includes mothers with unknown ages.

- The overall percentage of births to unmarried women with paternity acknowledgment in the birth hospital continued to increase, from 58.6% in 1995 to 66.0% in 1996. This represents a relative increase since 1991 of 40.7%.
- Paternity acknowledgment occurred at a lower rate among unmarried teens than among unmarried adults. However, both groups experienced sizable increases in paternity acknowledgment in 1996. Paternity acknowledgment among births to adults increased from 60.2% in 1995 to 67.1% in 1996, while acknowledgment among teens increased from 54.2% in 1995 to 62.8% in 1996.
- An increase in paternity acknowledgment for infants born to unmarried teens occurred among both young teen mothers (12-17 years old) and older teens (18-19 years old). The percentage of paternity acknowledgment for births to older unmarried teens increased from 57.1% in 1995 to 65.0% in 1996, while the corresponding percentage among younger unmarried teen women increased from 50.0% in 1995 to 59.7% in 1996.



**Table 11.**  
**In-Hospital Paternity Acknowledgment<sup>1</sup> by Unmarried Mother's**  
**Race/Hispanic Ethnicity and Age**  
**Massachusetts: 1996**

Unmarried Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>All Ages<sup>3</sup></b>	8,057	73.8	1,517	47.8	2,918	63.5	300	46.2	320	63.0	83	50.6	13,195	66.0
<b>20+</b>	6,248	75.1	1,207	50.1	1,955	63.2	238	46.4	225	61.3	66	52.0	9,939	67.1
<b>&lt; 20</b>	1,809	69.6	310	40.6	963	63.9	62	45.6	95	67.4	17	45.9	3,256	62.8
<b>18-19</b>	1,191	71.7	200	45.9	515	63.6	28	46.7	55	64.0	10	47.6	1,999	65.0
<b>12-17</b>	618	66.0	110	33.5	448	64.4	34	44.7	40	72.7	7	43.8	1,257	59.7

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

<sup>1</sup> Paternity acknowledgment: voluntary self-acknowledgment by fathers or acknowledgment through legal action. This table reflects data collected in hospitals, at time of birth only (see Glossary for further explanation).

<sup>2</sup> Percentages are based on the total number of births to unmarried mothers within each category.

<sup>3</sup> "All Ages" includes mothers with unknown ages.

- In-hospital paternity acknowledgment varied widely by race/Hispanic ethnicity, ranging among women of all ages from a high of 73.8% among white, non-Hispanic unmarried mothers to a low of 46.2% among Asian unmarried mothers. However, paternity acknowledgment increased from 1995 among all race/Hispanic ethnicity groups (data not shown).
- The variation in paternity acknowledgment across race/Hispanic ethnicity groups was seen among births to both adult and teen unmarried women. For both age groups, white non-Hispanics had the highest percentages, while black non-Hispanics and Asians had the lowest.
- Among the youngest teens (ages 12-17), black/non-Hispanic unmarried mothers had the lowest percentage of paternity acknowledgment, with only one out of every three births (33.5%) being acknowledged by the father.

**Table 12.**  
**Father's Age by Unmarried Mother's Age When Father Acknowledged Paternity<sup>1</sup>**  
**Massachusetts: 1996**

Mother's Age	Father's Age													
	12-17		18-19		20-24		25-29		30-34		35 and Older		Total <sup>3</sup>	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
20 +	63	0.6	281	2.8	2,537	25.5	3,094	31.1	2,099	21.1	1,858	18.7	9,939	100.0
<20	418	12.8	976	30.0	1,450	44.5	297	9.1	95	2.9	20	0.6	3,256	100.0
<18	298	23.7	471	37.5	406	32.3	60	4.8	19	1.5	3	**	1,257	100.0
18-19	120	6.0	505	25.3	1,044	52.2	237	11.9	76	3.8	17	0.9	1,999	100.0
16-17	207	19.6	408	38.6	369	34.9	54	5.1	16	1.5	2	**	1,056	100.0
12-15	91	45.3	63	31.3	37	18.4	6	3.0	3	**	1	**	201	100.0

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\*\*\* Calculations based on fewer than five events are excluded.

Paternity acknowledgment: voluntary self-acknowledgment by fathers or acknowledgment through legal action. This table reflects data collected in hospitals, at time of birth, only (see Glossary for further explanation).

Percentages are based on the total number of fathers whose ages were identified by unmarried mothers within each category.

The Ns may not add up to the Total because the unknown values were excluded from the table.

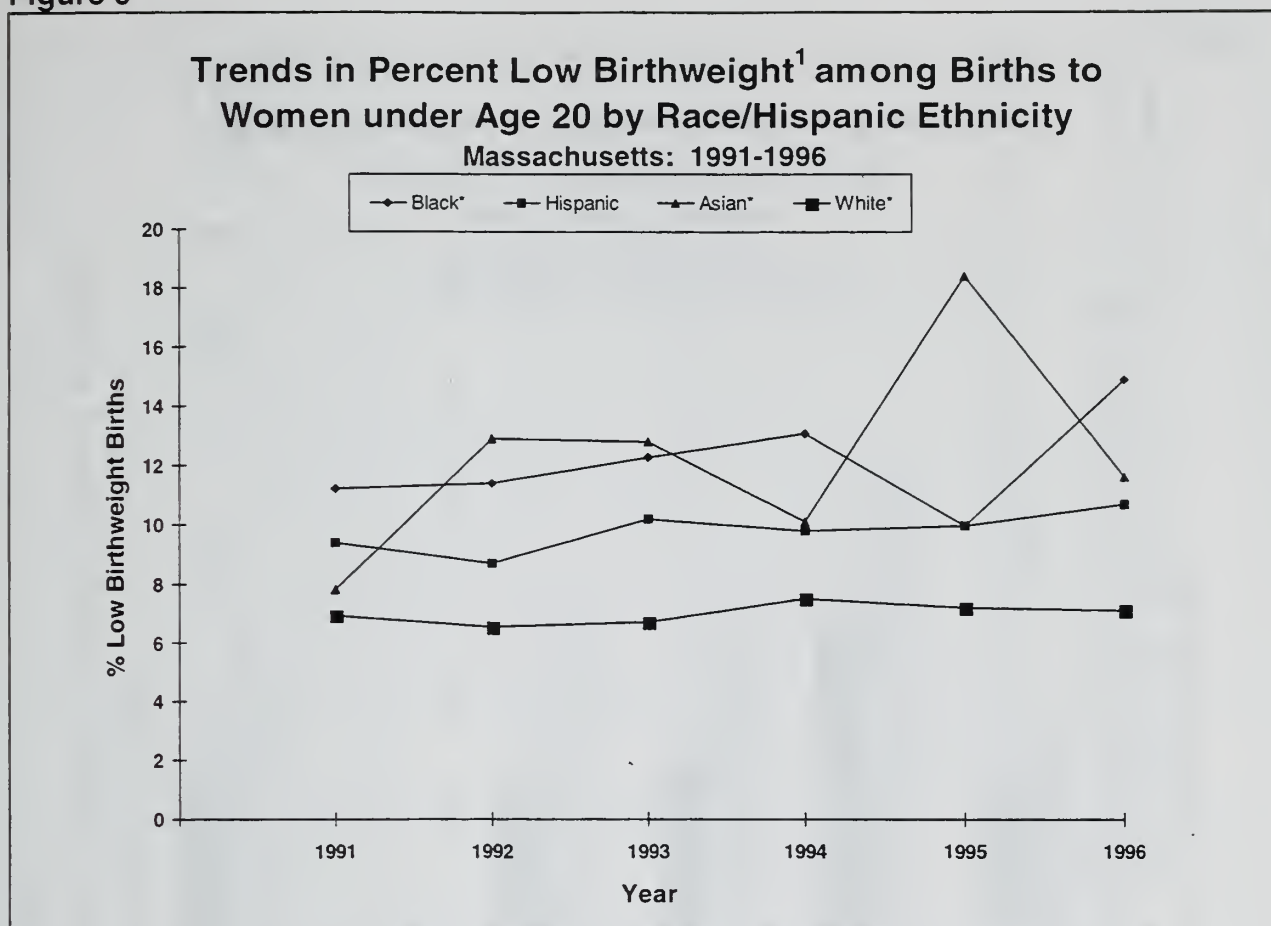
- For unmarried women ages 20 and older, 96.5% of the named fathers were also 20 and older. For unmarried teens, 57.1% of the named fathers were 20 and older, a slight decrease compared with 1995 (data not shown).
- Among unmarried teen mothers ages 16-17, 41.8% of the named fathers were 20 and older, a decrease of 5.6% from 1995, while among 12-15 year old unmarried mothers, 23.4% of named fathers were 20 and older, a relative decrease of 17.0% from the 1995 percentage, 28.2% (data not shown).

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Figure 6



	1991	1992	1993	1994	1995	1996
Black*	11.2	11.4	12.3	13.1	10.0	14.9
Hispanic	9.4	8.7	10.2	9.8	10.0	10.7
Asian*	7.8	12.9	12.8	10.1	18.4	11.6
White*	6.9	6.5	6.7	7.5	7.2	7.1

Source: Registry of Vital Records and Statistics, MDPH, 1991-1996.

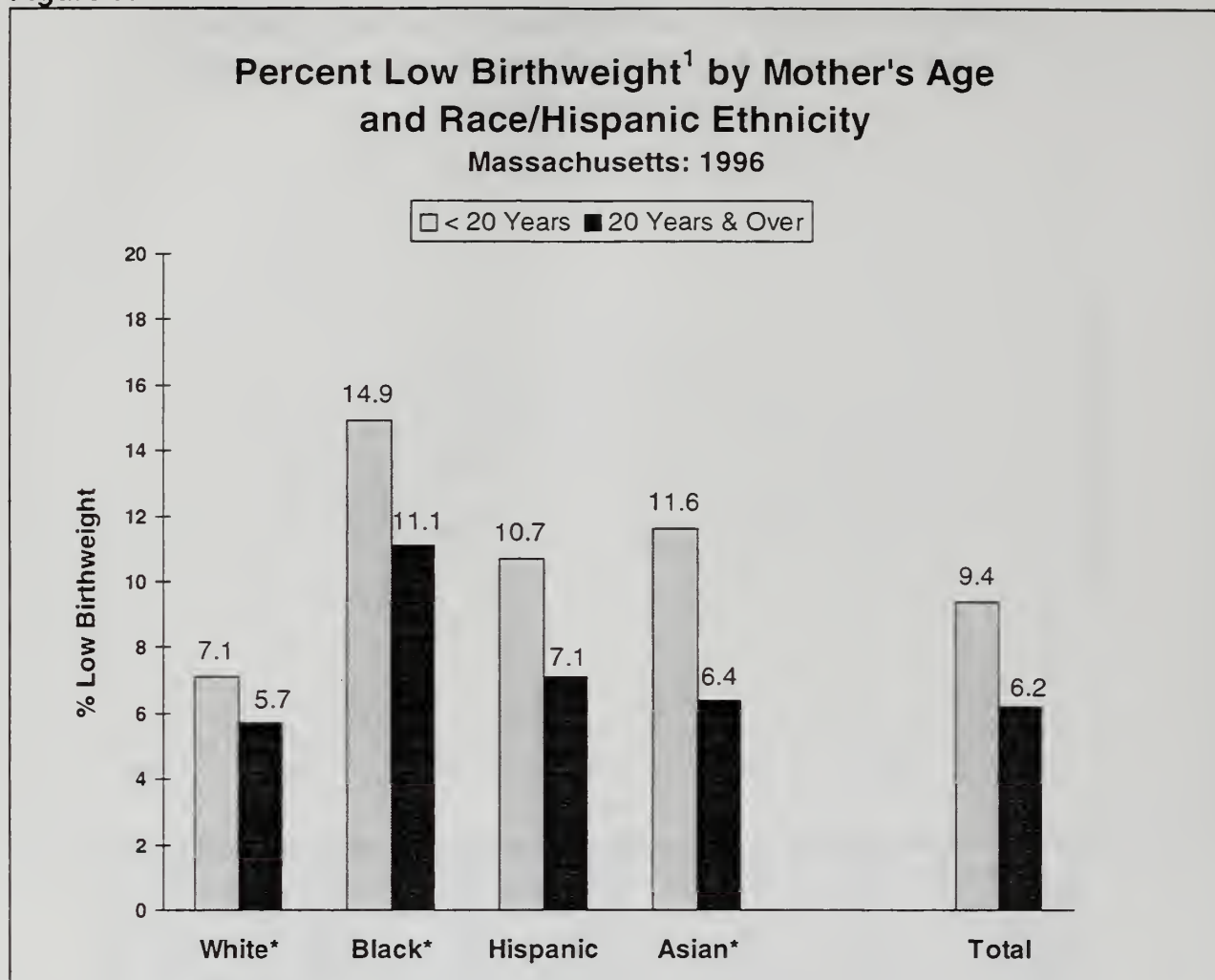
\* Non-Hispanic

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

- The occurrence of low birthweight (LBW) among births to teens (ages 12-19) continued to differ across race/Hispanic ethnicity groups, with white non-Hispanic teens having the lowest percentages of LBW. This same pattern was seen among births to older women (ages 20 and older) (see Figure 7).
- The percentage of LBW infants born to white non-Hispanic teen mothers changed little between 1995 and 1996 (7.2% in 1995 to 7.1% in 1996). The percentage of births to black non-Hispanic teens that were LBW increased from 10.0% in 1995 to 14.9% in 1996, and among Hispanics, from 10.0% in 1995 to 10.7% in 1996.
- *Because the number of LBW births was small among Asian teen mothers in 1995 and 1996 (30 and 19, respectively), their LBW percentages fluctuated widely between the two years. The percentage of LBW births to Asian teen mothers decreased from 18.4% in 1995 to 11.6% in 1996, a decrease attributable to a difference of 11 births.*



Figure 7.



Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

- Overall, low birthweight among teen births was 51.6% higher than it was for adult women (9.4% vs. 6.2%). This ratio varied by race/Hispanic ethnicity. The percentage low birthweight among births to black non-Hispanic teens in 1996 was 14.9%, compared with 11.1% low birthweight among births to black non-Hispanic adults. While low birthweight among white non-Hispanic teens was 24.6% higher than for white non-Hispanic adult women (7.1% vs. 5.7%), Asian teens had almost twice the percentage low birthweight compared with adult Asian women.

**Table 13.**  
**Low Birthweight<sup>1</sup> Births by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1996**

Mother's Age	Total		White*		Black*		Hispanic		Asian*		Other		Unknown	
	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>
<b>All Ages<sup>4</sup></b>	5,105	6.4	3,528	5.7	634	11.7	610	7.9	237	6.6	88	8.1	8	8.3
<b>20 +</b>	4,558	6.2	3,320	5.7	514	11.1	426	7.1	218	6.4	72	7.7	8	9.0
<b>&lt;20</b>	547	9.4	208	7.1	120	14.9	184	10.7	19	11.6	16	10.5	0	0.0
<b>&lt;18</b>	231	10.5	77	7.9	52	15.6	82	10.8	11	13.8	9	15.8	0	0.0
<b>18-19</b>	316	8.8	131	6.6	68	14.3	102	10.7	8	9.5	7	7.3	0	0.0
<b>15-17</b>	221	10.4	75	7.9	48	15.3	79	10.9	11	14.7	8	14.8	0	0.0
<b>12-14</b>	10	11.2	2	**	4	**	3	**	0	0.0	1	**	0	0.0

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> "N" includes total number of low birthweight births in each category.

<sup>3</sup> Percentages are based on the total number of births in each category when birthweight is known.

<sup>4</sup> "All Ages" includes mothers with unknown ages.

- The percentage of low birthweight births rose with decreasing maternal age, with the highest percentage overall occurring among the infants of women 12-14 years old (11.2%), compared with 6.2% among births to women over 20.
- Low birthweight also varied by race/Hispanic ethnicity, with the percentage for black non-Hispanic infants (11.7%), over twice as high as the percentage for white non-Hispanic infants (5.7%). This variation is also found among teens. The greatest contrast existed between black non-Hispanic teens (14.9%) and white non-Hispanic teens (7.1%).

**Table 14.**  
**Low Birthweight<sup>1</sup> Among Teen Births**  
**by Level of Prenatal Care<sup>2,3</sup> and Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 1996**

Mother's Race/ Ethnicity	Level of Prenatal Care								
	Adequate		Intermediate		Late/None				
	Births	Low Birthweight	Births	Low Birthweight	Births	Low Birthweight			
	N <sup>4</sup>	N	%	N <sup>4</sup>	N	%	N	%	
< 20 Years	3,359	294	8.8	1,799	183	10.2	477	46	9.6
White*	1,803	116	6.4	857	63	7.4	205	17	8.3
Black*	448	62	13.8	260	43	16.5	82	10	12.2
Hispanic	965	100	10.4	552	61	11.1	152	17	11.2
Asian*	60	8	13.3	73	9	12.3	28	2	**
Other*	80	8	10.0	56	7	12.5	9	0	0.0
Unknown	3	0	0.0	1	0	0.0	1	0	0.0

Source: Registry of Vital Records and Statistics, MDPIH, 1996.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Adequacy of Prenatal Care is determined by a calculation that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. See Glossary for further explanation.

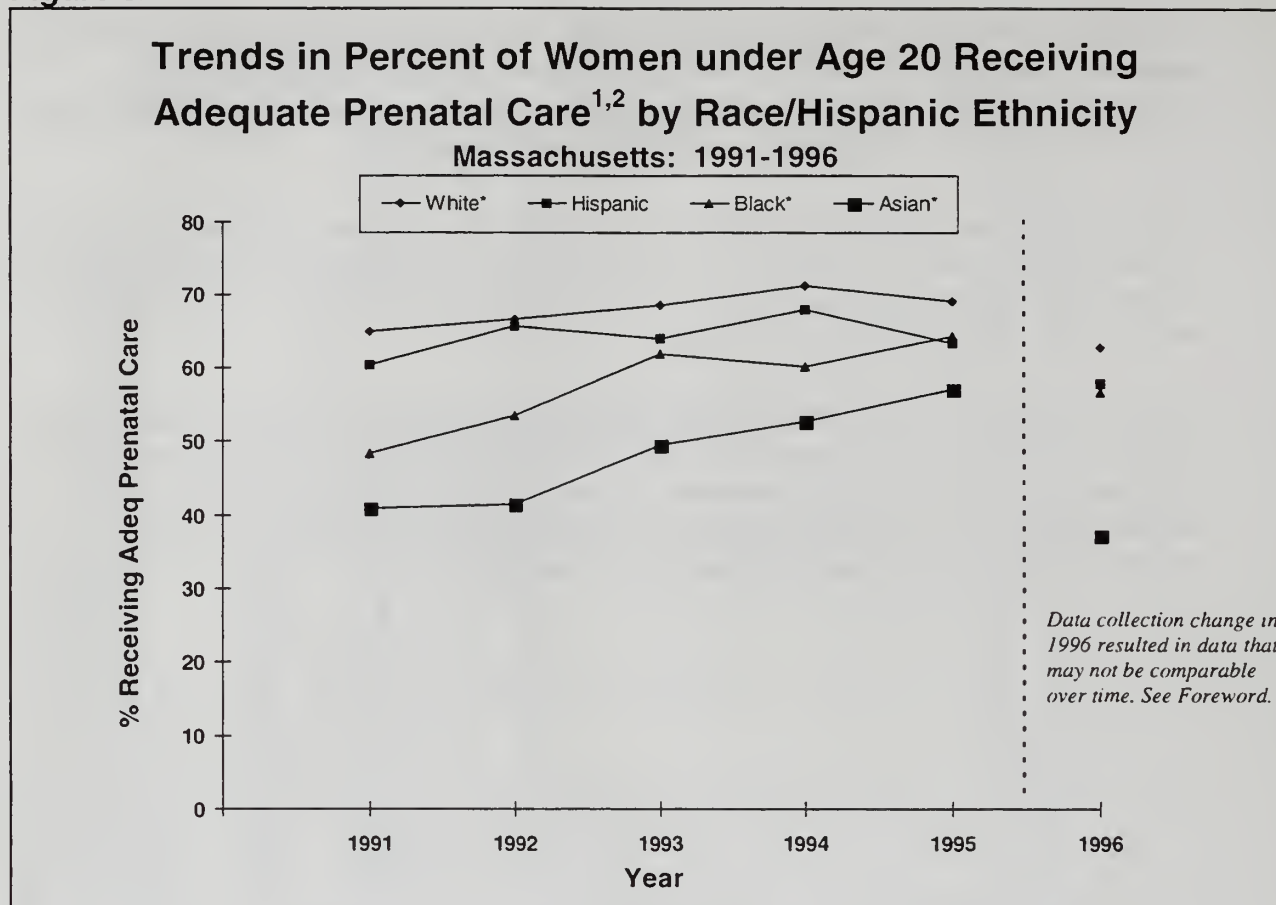
<sup>3</sup> Due to changes, beginning in 1996, in the collection of information on Adequacy of Prenatal Care, caution should be used when comparing these data over time. Refer to Foreword for an explanation of these changes.

<sup>4</sup> Births with unknown birthweight and adequacy of prenatal care were excluded.

- Among births to teens (women < 20 years of age), the highest percentage of low birthweight occurred among births to mothers who received intermediate prenatal care (10.2%). Comparatively, 8.8% of teens receiving adequate prenatal care had low birthweight births, and 9.6% with late or no prenatal care had low birthweight births.
- Black non-Hispanic women who had adequate or intermediate care had higher percentages of low birthweight than those with late or no prenatal care. Among Hispanic teen births, 10.4% of those with adequate prenatal care had low birthweight births, while 11.2% of those with late or no prenatal care had low birthweight births.
- There is variation in the incidence of low birthweight among race/Hispanic ethnic groups, irrespective of the level of prenatal care. Black non-Hispanic teens with adequate prenatal care had a substantially higher percentage of low birthweight (13.8%) than white non-Hispanic teens with adequate prenatal care (6.4%). This variation held true of the intermediate and late or no prenatal care categories as well.



Figure 8.



	1991	1992	1993	1994	1995	1996
White*	65.0	66.7	68.5	71.3	69.2	62.9
Hispanic	60.4	65.7	63.9	68.0	63.4	57.8
Black*	48.4	53.5	61.9	60.1	64.3	56.7
Asian*	40.9	41.5	49.4	52.7	57.1	37.3

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

<sup>1</sup> Adequacy of Prenatal Care is determined by a calculation that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. See Glossary for further explanation.

<sup>2</sup> Due to changes, beginning in 1996, in the collection of information on Adequacy of Prenatal Care, caution should be used when comparing these data over time. Refer to Foreword for an explanation of these changes.

- In 1996, white non-Hispanic teen mothers had the highest percentage of adequate prenatal care among teens of the other race/Hispanic ethnicity groups (62.9%). The percentage of Hispanic and black non-Hispanic teen mothers reported to have received adequate prenatal care were 57.8% and 56.7%, respectively.
- Asian teens continued to have a lower percentage of adequate prenatal care than teens of the other race/Hispanic ethnicity groups. Reported adequacy of prenatal care among Asian teens increased from 41.5% in 1992 to 57.1% in 1995.



**Table 15.**  
**Percent Low Birthweight<sup>1</sup> among Births to Women Under Age 20**  
**Massachusetts: 1996 and United States: 1995<sup>2</sup>**

Mother's Age	U. S. 1995 %	MA 1996 %
<b>Total</b>	7.3	6.4
<b>20+ Years</b>	7.0	6.1
<b>&lt; 20 Years</b>	9.4	9.4
<b>15-19 Years</b>	9.3	9.3
<b>&lt; 15 Years</b>	13.5	11.0

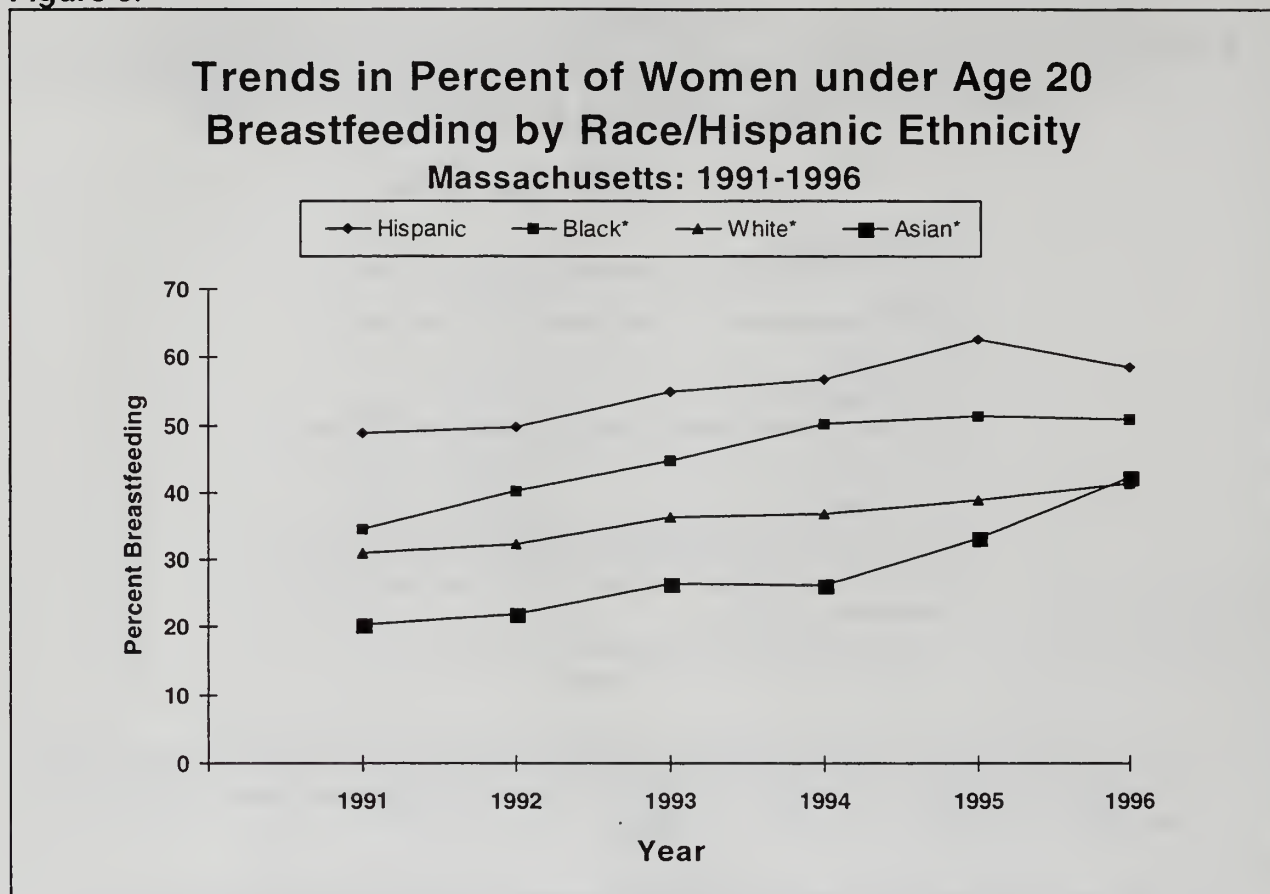
Source: Massachusetts data from Registry of Vital Records and Statistics, MDPH, 1996. U.S. data from the National Center for Health Statistics, 1995.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> 1996 U.S. data are not yet available.

- The 1996 percentage low birthweight among Massachusetts teen births (<20 years of age) was equivalent to the 1995 national low birthweight percentage among teen births (9.4%). *Final 1996 data for the U.S. not yet available.*
- Broken out by age, the 1996 Massachusetts low birthweight percentage among births to younger teens (<15 years of age) was lower than the nation as a whole in 1995 (11.0% vs. 13.5%, respectively).

Figure 9.



	1991	1992	1993	1994	1995	1996
Hispanic	48.7	49.6	54.8	56.6	62.5	58.4
Black*	34.6	40.2	44.6	50.1	51.3	50.8
White*	31.0	32.2	36.3	36.8	38.8	41.3
Asian*	20.3	21.9	26.4	26.1	33.1	42.2

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

<sup>1</sup> Mother was breastfeeding or intending to breastfeed at time the birth certificate was completed.

- The percentage of teen mothers reporting breastfeeding or an intention to breastfeed increased between 1995 and 1996 for white non-Hispanics (38.8% and 41.3%, respectively) and for Asians (33.1% and 42.2%, respectively). Breastfeeding declined among Hispanic teen mothers, from 62.5% in 1995 to 58.4% in 1996, and among black non-Hispanics, from 51.3% to 50.8%, respectively.
- Hispanic teen mothers continued to have the highest percentage of breastfeeding or intention to breastfeed in 1996. Asian teen mothers consistently had the lowest percentages until 1996, when the lowest reported percentage was among white teen mothers (41.3%). Since 1991, the percentage of Asian teen mothers has more than doubled (from 20.3% to 42.2%).

**Table 16.**  
**Prenatal and Birth Characteristics By Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1996**

Mother's Race/Ethnicity	Birthweight <sup>1</sup>		Low		Prenatal Care				C-Section		Breastfeeding <sup>4</sup>	
	Very Low				Adequate Care <sup>2,3</sup>		First Trimester					
	N	% <sup>4</sup>	N	% <sup>5</sup>	N	% <sup>5</sup>	N	% <sup>5</sup>	N	% <sup>5</sup>	N	% <sup>5</sup>
<b>All Ages<sup>6</sup></b>	929	1.2	5,105	6.4	62,547	80.2	66,057	83.9	15,632	19.7	51,058	66.5
<b>20 + Years</b>	832	1.1	4,558	6.1	59,182	81.9	62,405	85.5	14,914	20.3	48,338	67.9
<b>&lt; 20 Years</b>	97	1.7	547	9.4	3,364	59.6	3,651	64.0	718	12.4	2,720	48.0
<b>White*</b>	35	1.2	208	7.0	1,805	62.9	1,927	66.3	374	12.7	1,189	41.3
<b>Black*</b>	28	3.5	120	14.8	448	56.7	497	62.6	119	14.8	396	50.8
<b>Hispanic</b>	28	1.6	184	10.7	966	57.8	1,066	63.2	191	11.2	988	58.4
<b>Asian*</b>	4	**	19	11.6	60	37.3	67	41.4	9	5.5	68	42.2
<b>Other*</b>	2	**	16	10.3	80	55.2	88	58.7	24	15.7	77	50.0
<b>Unknown</b>	0	0.0	0	0.0	5	71.4	6	85.7	1	**	2	**

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Very low birthweight: < 1,500 grams or 3.3 pounds. Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Adequacy of Prenatal Care is determined by a calculation that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. See Glossary for further explanation.

<sup>3</sup> Due to changes, beginning in 1996, in the collection of information on Adequacy of Prenatal Care, caution should be used when comparing these data over time. Refer to Foreword for an explanation of these changes.

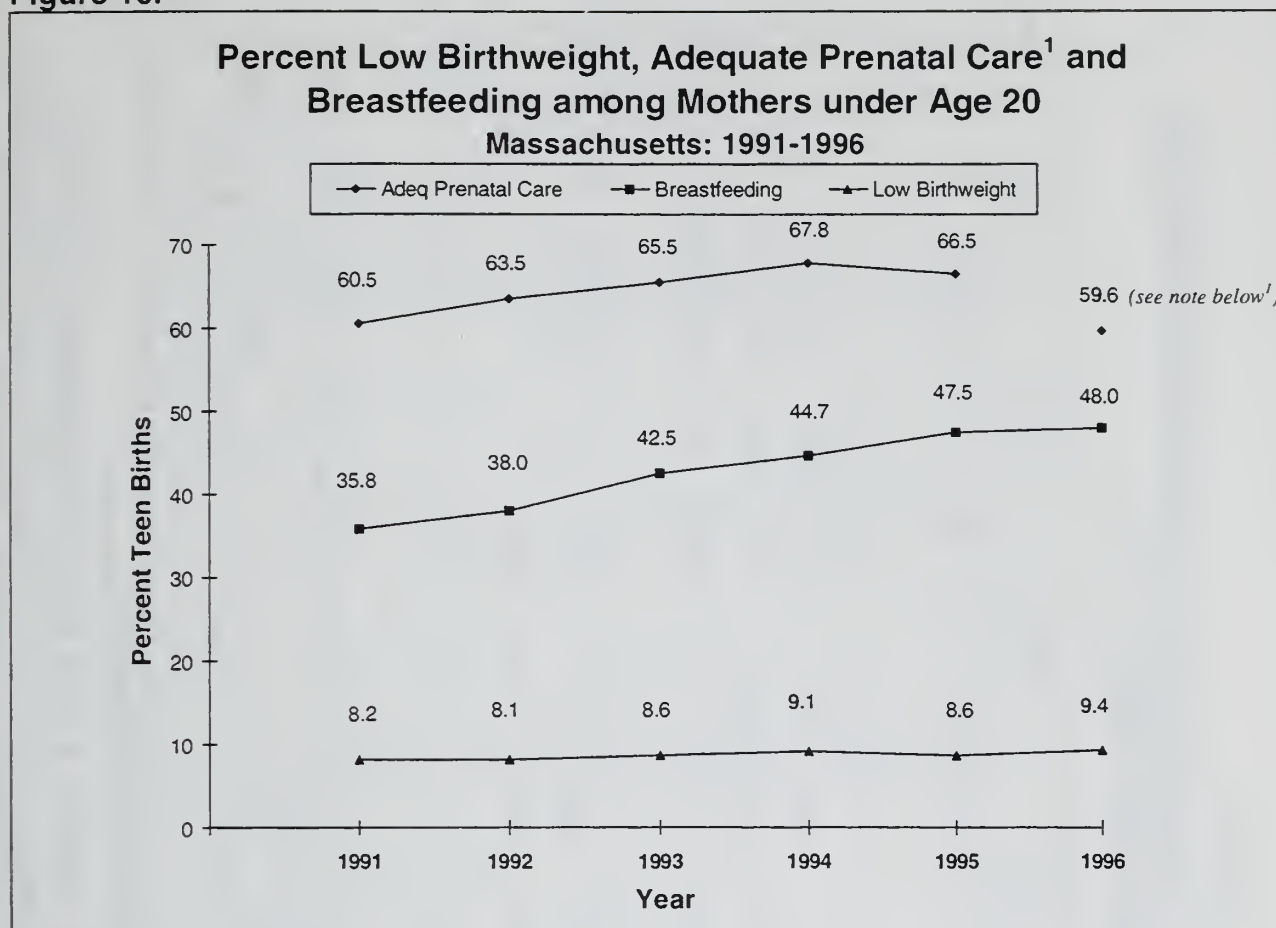
<sup>4</sup> Mother was breastfeeding or intending to breastfeed at time the birth certificate was completed.

<sup>5</sup> Percentages are based on total number of births within each category when birthweight, prenatal care, cesarean section or breastfeeding information is known.

<sup>6</sup> "All Ages" includes mothers with unknown ages.

- In 1996, very low birthweight was slightly more common among births to teens (<20 years) than among births to older women (1.7% vs. 1.1%). Among teen births, very low birthweight was highest among births to black non-Hispanic mothers (3.5%) compared to other race/Hispanic ethnicity groups.
- As in previous years, teen mothers were less likely than older mothers to have received adequate prenatal care (59.6% vs. 81.9%) or prenatal care starting in the first trimester (64.0% vs. 85.5%). Among teen mothers, Asian women had the lowest percentage receiving adequate prenatal care (37.3%) or starting care in the first trimester (41.4%).
- A lower proportion of teen mothers delivered by cesarean section than among older mothers (12.4% vs. 20.3%). The percentage for older mothers declined slightly from the previous year (21.3% vs. 20.3%) while the percentage among teen mothers was unchanged (1995 data not shown).
- Teen mothers were less likely to report breastfeeding or intending to breastfeed than older mothers (48.0% vs. 67.9%).

Figure 10.



Source: Registry of Vital Records and Statistics, MDPH, 1996.

<sup>1</sup> Due to changes, beginning in 1996, in the collection of information on Adequacy of Prenatal Care, caution should be used when comparing these data over time. Refer to Foreword for an explanation of these changes.

- The decline between 1995 and 1996 in the percentage of teen mothers receiving adequate prenatal care (66.5% vs. 59.6%) may be in part due to a change in the method used to calculate the adequacy index (see Foreword for explanation).
- The trend toward increasing proportions of teen mothers reporting breastfeeding or intention to breastfeed continued in 1996.
- The 1996 percentage of low birthweight among teen births (9.4%) was the highest percentage of low birthweight among teen births in the 1990's. The 1996 figure represented an increase 16.1% since 1990 (from 8.1% to 9.4%) (1990 data not shown).



**Table 17.**  
**Births by Gestational Age, Mother's Age, and Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 1996**

Mother's Age and Gestational Age <sup>1</sup> (weeks completed)	Total		White*		Black*		Hispanic		Asian*		Other*		Unknown	
	N	% <sup>2</sup>	N	%	N	%	N	%	N	%	N	%	N	%
<b>20 Years and Older</b>														
< 37 weeks	5,138	6.9	3,783	6.4	519	11.1	525	8.7	221	6.4	82	8.7	8	1.6
37-41 weeks	64,924	87.4	51,867	88.3	3,911	83.9	5,184	86.1	3,083	89.9	806	85.6	73	14.8
42 + <sup>3</sup> weeks	3,235	4.4	2,635	4.5	193	4.1	258	4.3	100	2.9	44	4.7	5	1.0
Unknown	1,016	1.4	477	0.8	40	0.9	57	0.9	26	0.8	10	1.1	406	82.5
<b>Less than 20 Years</b>														
< 37 weeks	559	9.6	236	8.0	100	12.3	192	11.1	15	9.1	12	7.7	4	**
37-41 weeks	4,920	84.1	2,512	85.1	675	83.3	1,454	84.4	144	87.8	130	83.9	5	10.9
42 + <sup>3</sup> weeks	266	4.5	164	5.6	31	3.8	58	3.4	4	**	9	5.8	0	0.0
Unknown	104	1.8	40	1.4	4	**	18	1.0	1	**	4	**	37	80.4

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Clinical estimate of the number of weeks of pregnancy completed as estimated by the attendant at birth or the postnatal physician. Normal gestational age is defined as delivery between the completion of the 37th and the 41st week of pregnancy.

<sup>2</sup> Percentages are based on column totals.

<sup>3</sup> The majority (86.7%) of this group completed no more than 42 weeks gestation.

- The incidence of preterm birth continues to be higher among teen births than among births to older women (9.6% vs. 6.9%). There was almost no change from the previous year in the percentage of teen births that were premature.
- Births to black non-Hispanic teen mothers had the highest percentage of preterm birth among the race/Hispanic ethnicity groups (12.3%), followed by births to Hispanic teens (11.1%). White non-Hispanic teen mothers had the lowest percentage of preterm delivery (8.0%). The same pattern was seen among births to older women..

**Table 18.**  
**Trends in Infant Mortality Rates<sup>1</sup> by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1990-1995<sup>2</sup>**

Mother's Age	White*		Black*		Hispanic		Asian*		Other/Unk		Total	
	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate
1990												
20+	396	5.8	83	13.7	54	8.1	20	6.3	12	13.4	565	6.6
<20	31	7.4	17	15.2	14	8.2	1	**	1	**	64	8.7
1991												
20+	342	5.3	77	13.6	48	7.2	17	5.5	8	8.6	492	6.1
<20	38	9.9	14	13.2	20	11.3	1	**	2	**	75	10.7
1992												
20+	343	5.4	89	15.9	41	6.1	18	5.8	16	16.0	507	6.3
<20	32	9.0	20	18.9	19	11.0	0	0.0	2	**	73	11.0
1993												
20+	318	5.1	68	12.6	47	7.3	10	3.2	11	11.1	454	5.8
<20	25	7.2	14	14.0	23	12.7	2	**	0	0.0	64	9.7
1994												
20+	293	4.8	73	13.9	37	5.7	14	4.4	15	15.2	432	5.6
<20	33	10.0	8	8.0	20	10.3	1	**	2	**	64	9.7
1995												
20+	228	3.8	55	11.0	48	7.6	15	4.6	13	12.7	359	4.8
<20	25	7.8	7	8.1	15	8.7	0	0.0	1	**	48	7.9

Source: Registry of Vital Records and Statistics, MDPH: 1990-1995.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

<sup>2</sup> 1995 is the last year data were available for this analysis. See Technical Notes for further explanation.

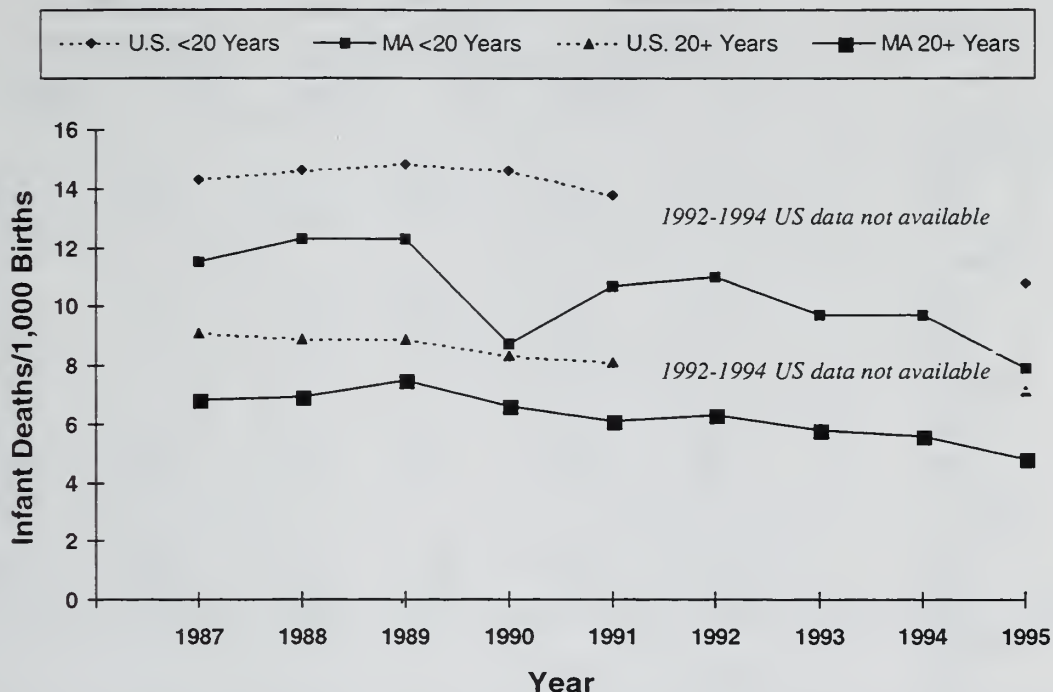
<sup>3</sup> "N" refers to the number of deaths occurring in that year.

- Infant mortality rates (IMR) have declined since 1990 for both teen births and births to older women. However, the IMR declined more slowly among births to teens (down 9.2% since 1990) than among births to older women (down 27.3% since 1990).
- Overall, the IMR was consistently higher among births to teens than among births to older women. The IMR for infants born in 1995 was 7.9 deaths per 1,000 live births to teen women and 4.8 for births to older women. When broken out by race/Hispanic ethnicity, however, the trend is less consistent. In 1994 and 1995, the IMR among births to black non-Hispanic teen women was lower than the IMR among older women of the same race/Hispanic ethnicity.
- The IMR among infants born to teens showed less variation across race/Hispanic ethnic groups in 1995 compared to previous years.

Figure 11.

## Trends in Infant Mortality Rates<sup>1</sup> by Mother's Age

### Massachusetts: 1987-1995<sup>2</sup> and U.S.: 1987-1991 & 1995<sup>3</sup>



	1987	1988	1989	1990	1991	1992	1993	1994	1995
U.S. <20 Years	14.3	14.6	14.8	14.6	13.8	N/A	N/A	N/A	10.8
MA <20 Years	11.5	12.3	12.3	8.7	10.7	11	9.7	9.7	7.9
U.S. 20+	9.1	8.9	8.9	8.3	8.1	N/A	N/A	N/A	7.1
MA 20+	6.8	6.9	7.5	6.6	6.1	6.3	5.8	5.6	4.8

Source: Registry of Vital Records and Statistics, MDPH, 1988-1995; National Center for Health Statistics, 1987-1991 and 1995.

<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

<sup>2</sup> 1995 is the latest year data were available for this analysis. See Technical Notes for further explanation.

<sup>3</sup> U.S. data not available for 1992-1994.

- The infant mortality rate (IMR) for infants born in 1995 was lower in Massachusetts than in the nation as a whole. The IMR for Massachusetts teen births in 1995 was 26.9% lower than the IMR for U.S. teen births (7.9 deaths per 1,000 live births vs. 10.8). Similarly, the IMR among 1995 births to older women in Massachusetts was 32.4% lower than for the nation (4.8 vs. 7.1).
- The IMR is declining at a faster rate in Massachusetts compared with the nation for births to women of both age groups. Between 1987 and 1995, the IMR among teen births declined 31.3% in Massachusetts compared to a decline of 24.5% for the U.S. The IMR for births to older women declined 29.4% in Massachusetts during this period compared to 22.0% for the U.S.



**Table 19.**  
**Trends in Neonatal and Post Neonatal Mortality Rates<sup>1</sup>**  
**by Mother's Age**  
**Massachusetts: 1990-1995<sup>2</sup>**

Mother's Age	Neonatal (<28 days)		Post Neonatal (28-364 days)		Total Infant Mortality Rate	
	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate
<b>1990</b>						
20+	400	4.7	165	1.9	656	6.6
<20	45	6.1	19	2.6	64	8.7
<b>1991</b>						
20+	350	4.3	142	1.8	492	6.1
<20	51	7.3	24	3.4	75	10.7
<b>1992</b>						
20+	372	4.6	130	1.6	502	6.2
<20	52	7.8	21	3.2	73	11.0
<b>1993</b>						
20+	331	4.2	123	1.6	454	5.8
<20	44	6.7	20	3.0	64	9.7
<b>1994</b>						
20+	309	4.0	122	1.6	431	5.6
<20	47	7.2	17	2.6	64	9.7
<b>1995</b>						
20+	263	3.5	96	1.3	359	4.8
<20	29	4.7	19	3.1	48	7.9

Source: Registry of Vital Records and Statistics, MDPH: 1990-1995.

<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

<sup>2</sup> 1995 is the latest year data were available for this analysis. See Technical Notes for further explanation.

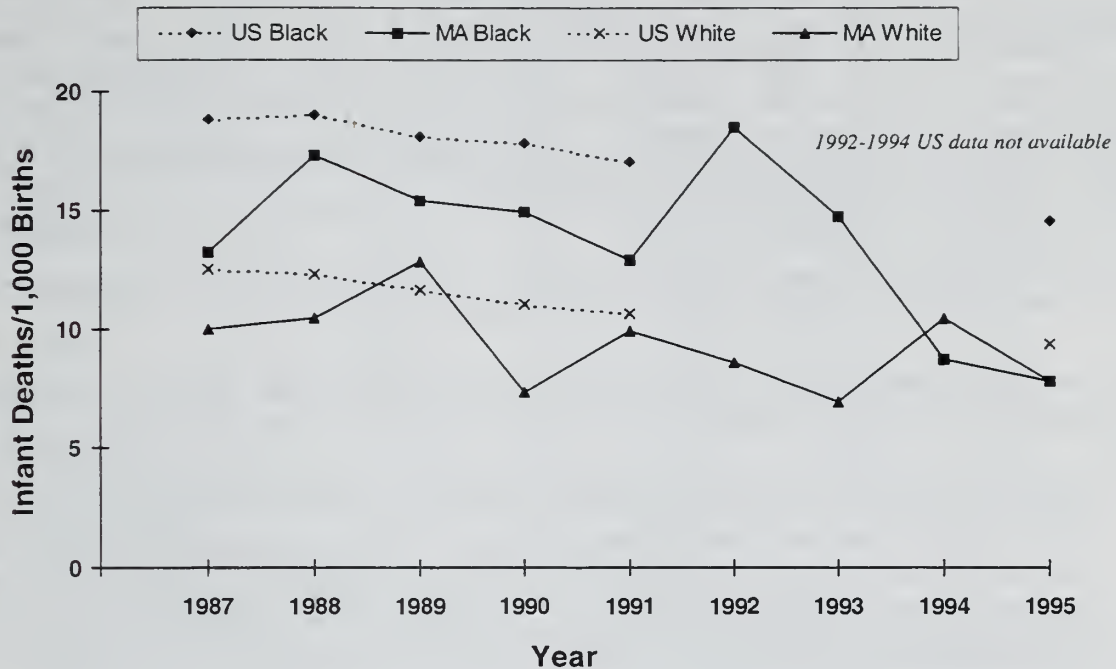
<sup>3</sup> "N" refers to the number of deaths occurring in that year.

- In 1995, the post-neonatal mortality rate among births to teen mothers was over two times that of adult mothers (3.1 vs. 1.3). Neonatal mortality was also higher among births to teen mothers (4.7 vs. 3.5). Since 1990, neonatal and post neonatal mortality occurred at consistently higher rates among births to teens than to adults.
- Regardless of mother's age, the IMR was consistently higher during the neonatal period than in the post neonatal period.
- Between 1994 and 1995, neonatal mortality among births to teen mothers decreased by 34.7% (7.2 to 4.7), while post neonatal mortality showed little change (an increase of 2 fatalities). Among births to adult mothers, both neonatal and post neonatal mortality decreased (12.5% and 18.7% respectively).



Figure 12.

# **Trends in Infant Mortality Rates<sup>1</sup> among Women under Age 20 by Race<sup>2</sup>** Massachusetts: 1987-1995<sup>3</sup> and U.S.: 1987-1991 and 1995<sup>4</sup>



	1987	1988	1989	1990	1991	1992	1993	1994	1995
US Black	18.8	19.0	18.1	17.8	17.0	N/A	N/A	N/A	14.5
MA Black	13.2	17.3	15.4	14.9	12.9	18.5	14.7	8.7	7.8
US White	12.5	12.3	11.6	11.0	10.6	N/A	N/A	N/A	9.4
MA White	10.0	10.4	12.8	7.3	9.9	8.6	6.9	10.4	7.8

Source: Massachusetts data from Registry of Vital Records and Statistics, MDPH: 1987-1995. U.S. data from the National Center for Health Statistics, 1987-1991 and 1995.

<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

<sup>2</sup> The white and black race categories include Hispanics.

<sup>3</sup> 1995 is the latest year data were available for this analysis. See Technical Notes for further explanation.

<sup>4</sup> U.S. data not available for 1992-1994.

- For the five year period 1987-1991, infant mortality among teen mothers at the national level exceeded that of Massachusetts teen mothers for both blacks and whites (with an exception in 1989, when infant mortality among whites in Massachusetts exceeded that of the U.S.).
- In 1995, the IMR among teen mothers at the national level exceeded that of Massachusetts teen mothers for both black and white teen mothers. The IMR among black teen mothers was nearly twice as high nationally as it was statewide (14.5 vs. 7.8).
- Unlike the previous seven years, the Massachusetts IMR among black teens dropped below that of white teens in 1994. In 1995, the IMR among both white and black teen mothers dropped to the equivalent IMR of 7.8 infant deaths per 1,000 births.

**Table 20.**  
**Infant Mortality Rates<sup>1</sup> by Low Birthweight<sup>2</sup> and Mother's Age**  
**Massachusetts: 1995<sup>3</sup>**

Mother's Age	<1500g		1500-2499g		<2500g		2500+g	
	N <sup>4</sup>	IMR	N <sup>4</sup>	IMR	N <sup>4</sup>	IMR	N <sup>4</sup>	IMR
<b>20 + Years</b>	183	208.7	45	11.9	228	49.1	123	1.7
<b>&lt; 20 Years</b>	24	279.1	7	15.9	31	58.8	17	3.1

Source: Registry of Vital Records and Statistics, MDPH: 1995.

<sup>1</sup> Infant mortality rate: number of infant deaths per 1,000 live births (see Glossary for further explanation).

<sup>2</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>3</sup> 1995 is the latest year data were available for this analysis. See Technical Notes for further explanation.

<sup>4</sup> "N" refers to the number of deaths occurring in that year and age category.

- The infant mortality rate (IMR) among normal birthweight infants (2,500 grams or more) was nearly twice as high for births to teen mothers as for births to adult mothers (3.1 vs. 1.7).
- The IMR increased dramatically as birthweight declined, regardless of mother's age. In 1995, the IMR among very low birthweight births (< 1,500 grams) to teen mothers was 18 times greater than the rate among moderately low birthweight births (1,500-2,499 grams) (15.9 vs. 279.1). The IMR among very low birthweight births to adult mothers was also 18 times greater than the rate among moderately low birthweight births (11.9 vs. 208.7).
- The IMR among births to teens exceeded those for adults in each birthweight category. Compared to 1994, the difference between the IMRs of teen and adult very low birthweight births widened in 1995. In 1994, IMR among very low birthweight teen births was 6.6% higher than very low birthweight adult births (287.0 vs. 268.0) compared to 25.2% higher in 1995 (279.1 vs. 208.7) (1994 data not shown).
- Between 1994 and 1995, infant mortality among low birthweight births decreased for both teen and adult births. A smaller decrease was found among births to teens (9.5%) than to adults (18.4%) (1994 data not shown).

**Table 21.**  
**Maternal Smoking<sup>1,2</sup> by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 1996**

Mother's Race/Ethnicity	< 20 Years			20+ Years		
	Births N <sup>3</sup>	Smokers N	%	Births N <sup>3</sup>	Smokers N	%
<b>Total</b>	5,790	1,337	23.1	73,584	9,134	12.4
<b>White*</b>	2,943	1,002	34.0	58,552	7,856	13.4
<b>Black*</b>	805	105	13.0	4,625	579	12.5
<b>Hispanic</b>	1,719	186	10.8	6,006	521	8.7
<b>Asian*</b>	163	16	9.8	3,417	49	1.4
<b>Other*</b>	155	27	17.4	935	121	12.9
<b>Unknown</b>	5	1	**	49	8	16.3

Source: Registry of Vital Records and Statistics, MDPH: 1996.

\* Non-Hispanic

<sup>1</sup> Any amount of cigarette smoking by mother during pregnancy.

<sup>2</sup> Maternal smoking is self-reported by mothers, usually following the birth of their child, and as such these data should be interpreted cautiously, as self-reported data may be biased, artificially lowering smoking prevalence. In 1996, Martha's Vineyard Hospital, with 117 total births, is not included in the calculation of smoking prevalence because there was a high percentage of records for which data on tobacco use were missing.

<sup>3</sup> Cases with unknown smoking status were excluded.

- As in 1995, more teen mothers smoked during pregnancy than adult mothers in 1996 (23.1% vs. 12.4%). Between 1995 and 1996, the percentage of teen mothers who smoked during pregnancy increased from 21.5% to 23.1%, while the percentage of adult women who smoked decreased slightly from 12.9% to 12.4% (1995 data not shown).
- Among teen mothers, white non-Hispanics had the highest prevalence of smoking (34.0%), 2.6 times that of the next highest race/Hispanic ethnicity, black non-Hispanics (13.0%). White non-Hispanic teen mothers were also 2.5 times more likely to smoke during pregnancy than were adult mothers of the same race.
- Between 1995 and 1996, smoking prevalence during pregnancy increased among all teen race/Hispanic ethnicity groups: white non-Hispanic, from 32.0% to 34.0%; black non-Hispanic, from 11.7% to 13.0%; Hispanic, from 8.7% to 10.8%; and Asian, from 0.0% to 9.8% (1995 data not shown).



**Table 22.**  
**Low Birthweight by Mother's Age, Smoking<sup>1,2</sup> Status**  
**and Race/Hispanic Ethnicity**  
**Massachusetts: 1996**

Mother's Age	Smokers			Non-Smokers		
	Births N <sup>3</sup>	LBW N	% <sup>4</sup>	Births N <sup>3</sup>	LBW N	% <sup>4</sup>
<b>20 Years and Older</b>	9,112	965	10.6	64,229	3,558	5.5
White*	7,839	756	9.6	50,537	2,546	5.0
Black*	576	119	20.7	4,021	388	9.6
Hispanic	519	71	13.7	5,458	355	6.5
Asian*	49	4	**	3,361	212	6.3
Other/Unknown*	129	15	11.6	852	57	6.7
<b>&lt; 20 Years</b>	1,332	145	10.9	4,437	399	9.0
White*	1,000	90	9.0	1,936	117	6.0
Black*	104	25	24.0	698	93	13.3
Hispanic	184	27	14.7	1,528	157	10.3
Asian*	16	1	**	147	18	12.2
Other/Unknown*	28	2	**	128	14	10.9

Source: Registry of Vital Records and Statistics, MDPH: 1996.

\* Non-Hispanic

\*\* Calculations based on fewer than five events are excluded.

<sup>1</sup> Any amount of smoking cigarettes by mother during pregnancy.

<sup>2</sup> Maternal smoking is self-reported by mothers, usually following the birth of their child, and as such these data should be interpreted cautiously, as self-reported data may be biased, artificially lowering smoking prevalence. In 1995, Martha's Vineyard Hospital, with 117 total births, is not included in the calculation of smoking prevalence there was a high percentage of records for which data on tobacco use were missing.

<sup>3</sup> Cases with unknown smoking status or birthweight were excluded.

<sup>4</sup> Percentage of low birthweight births to smoking or non-smoking mothers.

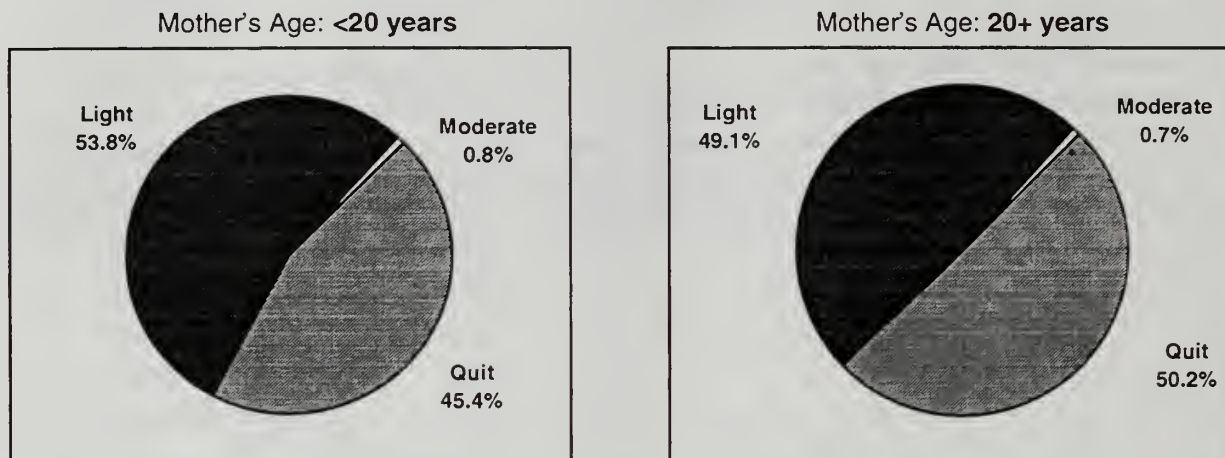
- Low birthweight births occurred more frequently among mothers who smoked during pregnancy than among non-smoking mothers, for both teen and adult mothers, and across all race/Hispanic ethnicity groups (except among Asians where there were too few smokers to make a comparison).
- The percentage of low birthweight births to smokers increased from 1995 to 1996 for both teen mothers (9.5% to 10.9%) and adult mothers (from 9.9% to 10.6%) (1995 data not shown). All race/Hispanic ethnicity groups showed an increase in low birthweight births with the exception of Hispanic teen smokers where there was a decrease from 16.7% to 14.7%. The greatest increases were found to black non-Hispanic smokers, both teens (15.8% to 24.0%) and adults (17.4% to 20.7%).

- The percentage of low birthweight births to black non-Hispanic teen smokers was 2.6 times greater than that of white smoking teens.
- The difference in the prevalence of low birthweight among births to smokers and non-smokers was wider among adult mothers (a 5.1 percentage point difference for adults and a 1.9 percentage point difference for teens).
- Percentage low birthweight among to smokers varied little between age groups (10.9% of teen smokers vs. 10.6% of adult smokers). When broken out by race/Hispanic ethnicity, however, the percentage of low birthweight births to black non-Hispanic teen smokers was greater than to adult smokers with the same race (24.0% vs. 20.7%). This is a reversal from 1995 when births to black adult smokers had a higher prevalence of low birthweight (1995 data not shown).

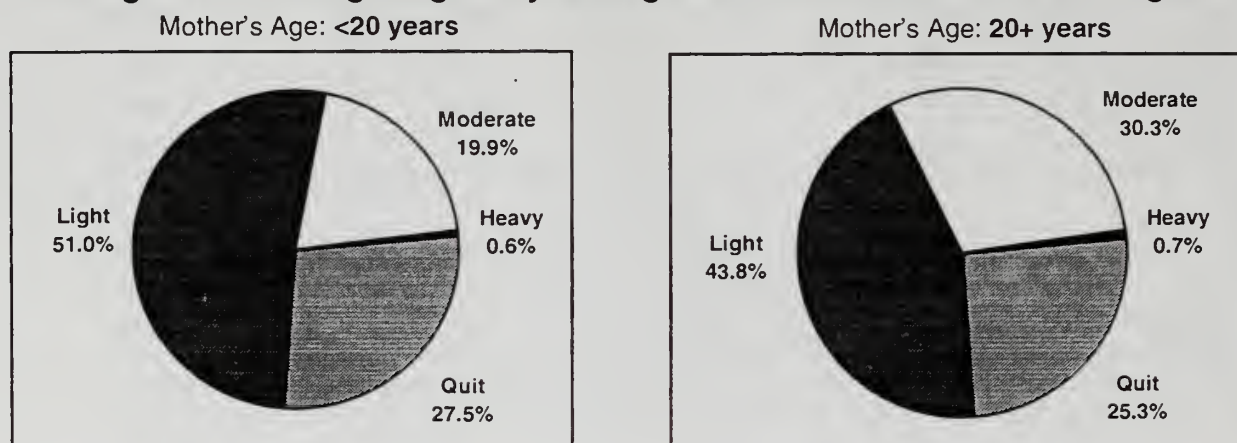


**Figure 13.**  
**Smoking Status<sup>1</sup> During Pregnancy by Mother's Age and**  
**Smoking Status Prior to Pregnancy**  
**Massachusetts: 1996**

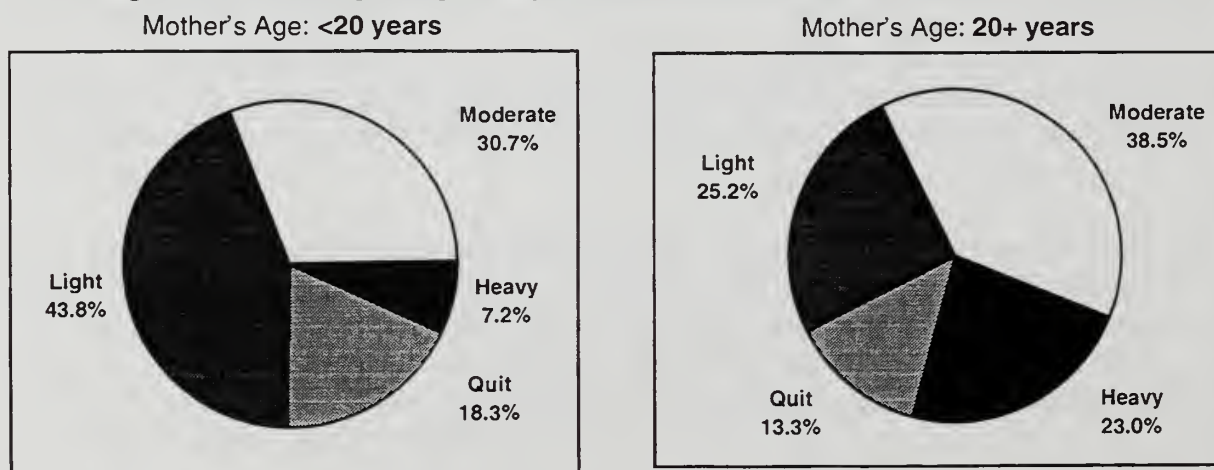
**Smoking Status During Pregnancy among Light Smokers Prior to Pregnancy**



**Smoking Status During Pregnancy among Moderate Smokers Prior to Pregnancy**



**Smoking Status During Pregnancy among Heavy Smokers Prior to Pregnancy**



Source: Registry of Vital Records and Statistics, MDPH: 1996.

<sup>1</sup> Daily use: Light = 1-10 cigarettes, Moderate = 11-20 cigarettes, Heavy = 21+ cigarettes

- Overall, the fewer cigarettes mothers smoked *prior* to pregnancy, the more likely they were to quit or reduce their level of smoking *during* pregnancy. This pattern was found among both teen and non-teen age groups.
- Among teen mothers who were light smokers prior to pregnancy (smoked 1-10 cigarettes per day), 45.4% quit smoking during pregnancy, just over half (53.8%) maintained light smoking and less than 1% increased their smoking to moderate levels. This pattern also occurred among non-teen mothers.
- Among mothers who were moderate smokers prior to pregnancy (smoked 11-20 cigarettes per day), teen mothers were more likely than older mothers to reduce their smoking status to light smoking or to quit. Among teen moderate smokers, 51.0% reduced their smoking status to light and 27.5% quit, while 43.8% of older moderate smokers reduced to light smoking and 25.3% quit.
- Older mothers (ages 20 and older) who were heavy smokers prior to pregnancy (smoked 21 or more cigarettes per day) were far less likely to quit or reduce their smoking levels compared with heavy smoking teen mothers. Among the heavy smoking mothers, 62.1% of teens either quit or reduced their smoking levels to light compared with 38.5% of older mothers. Similarly, 23.0% of older, heavy smoking mothers remained heavy smokers during pregnancy, as opposed to only 7.2% of teen, heavy smoking mothers.



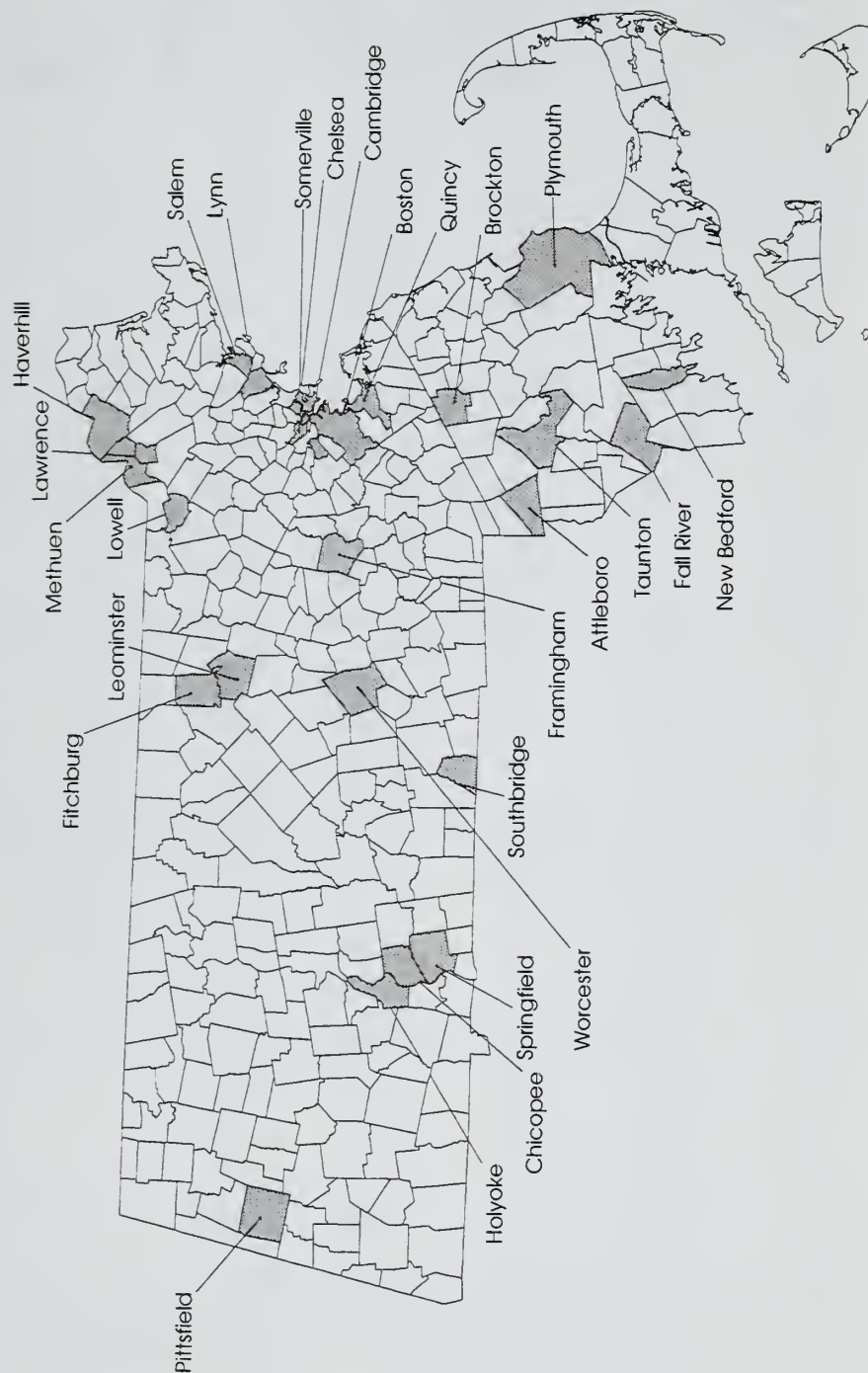
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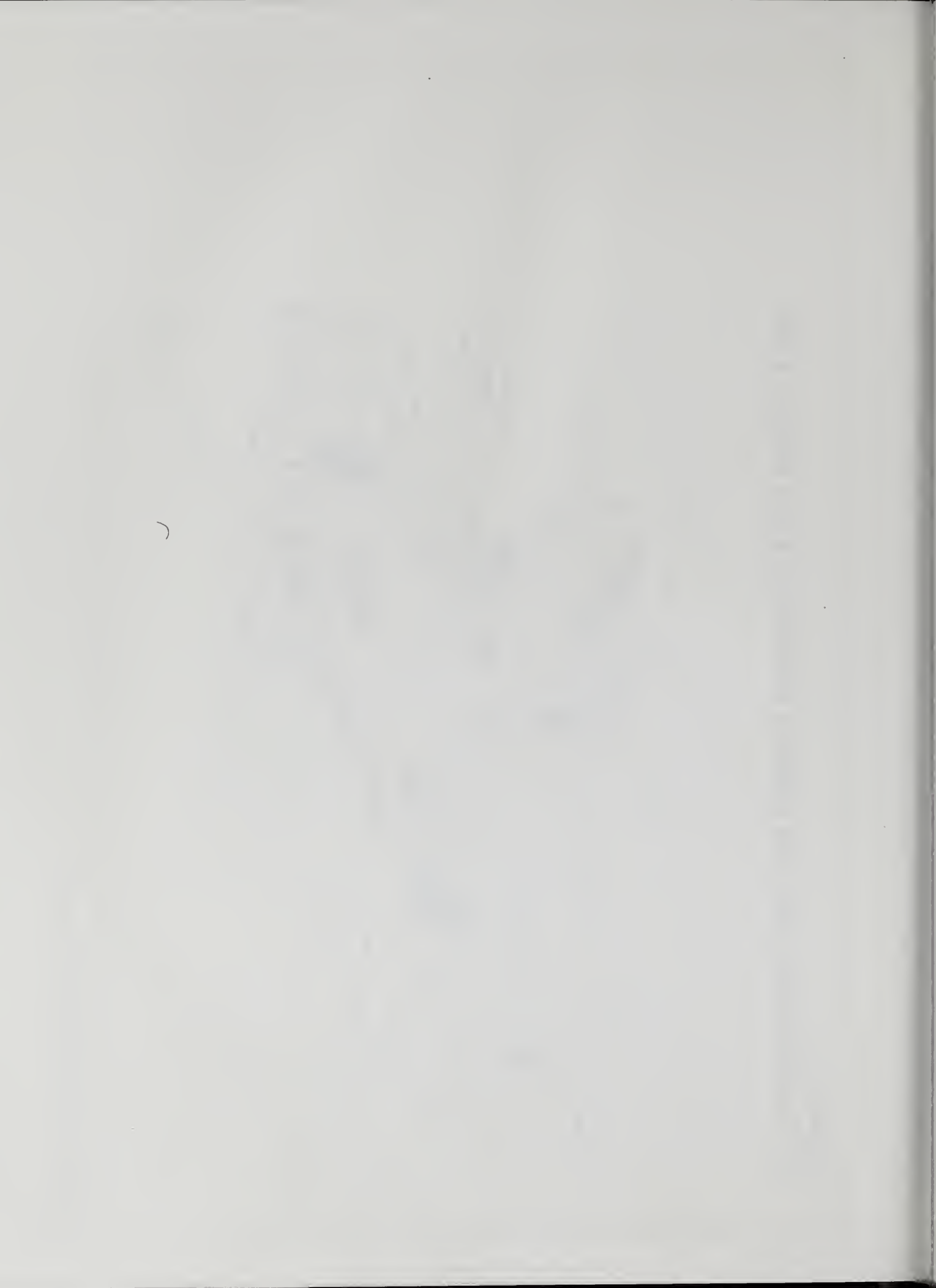
*Birth Characteristics  
for Selected Communities*





**Figure 14.**  
**26 Communities with the Highest Number of Teen Births, 1996**





**Table 23.**  
**Trends in Birth Rates Among Women Ages 15-19**  
**for Selected Communities<sup>1</sup>, Ranked by 1996 Teen Birth Rate<sup>2</sup>**  
**Massachusetts: 1996, 1995, 1990**

1996 Rank	Demographic Area	1996		1995		1990	
		Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate
	<b>Massachusetts</b>	<b>5,758</b>	<b>32.6</b>	<b>5,990</b>	<b>33.0</b>	<b>7,258</b>	<b>35.1</b>
1	Holyoke	188	102.6	170	96.2	203	140.3
2	Chelsea	91	93.8	74	77.0	105	114.8
3	Lawrence	278	83.7	286	88.7	338	122.8
4	Springfield	479	82.5	448	76.8	523	87.9
5	Brockton	208	74.4	183	63.9	216	67.8
6	Southbridge	38	71.4	43	79.6	48	82.5
7	Taunton	98	70.1	85	59.6	95	61.0
8	Leominster	72	68.5	60	56.6	42	37.8
9	New Bedford	216	64.6	203	60.4	263	76.3
10	Lowell	233	63.9	298	81.1	309	81.3
11	Lynn	155	62.9	175	71.1	194	79.4
12	Fitchburg	100	61.7	93	56.4	146	82.1
13	Pittsfield	56	58.9	68	64.9	74	48.3
14	Fall River	152	55.9	169	60.4	246	76.9
15	Methuen	42	50.7	49	54.3	53	41.7
16	Worcester	304	49.9	349	56.2	399	58.8
17	Haverhill	69	47.8	88	60.2	94	60.4
18	Boston	794	44.1	880	47.3	1,137	52.7
19	Attleboro	39	40.0	47	46.8	53	45.9
20	Somerville	71	39.1	57	30.3	64	29.2
21	Salem	40	37.5	45	40.9	45	35.4
22	Chicopee	64	37.4	59	34.0	84	44.9
23	Plymouth	39	26.6	42	28.5	55	35.6
24	Framingham	45	26.3	51	28.3	44	19.6
25	Quincy	38	26.1	44	27.5	51	22.0
26	Cambridge	46	14.6	37	11.5	54	14.9

Sources: Registry of Vital Records and Statistics, MDPH, 1990, 1995, 1996. The 1990 population data are based on the 1990 Census Massachusetts Age, Race and Sex File (MARS File); the 1995 and 1996 data are interpolations based on the 1990 Census and estimates from the Massachusetts Institute for Social and Economic Research (MISER).

<sup>1</sup> 25 communities with the greatest number of births to teens ages 12-19. In 1996, there were 26 communities due to ties in the numbers of teen births.

<sup>2</sup> Rates are per 1,000 females ages 15-19 in each city/town.

**Table 24.**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1996**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Massachusetts	All Ages <sup>2</sup>	61,716	5,473	7,746	3,594	1,635	80,164
	< 18	979	335	765	80	76	2,235
	< 20	2,952	810	1,722	164	201	5,849
	20 +	58,762	4,663	6,024	3,430	1,434	74,313
Attleboro	All Ages <sup>2</sup>	505	12	46	28	5	596
	< 18	8	0	**	**	0	12
	< 20	25	**	8	5	**	39
	20 +	480	¥	38	23	¥	557
Boston	All Ages <sup>2</sup>	2,696	2,635	1,542	555	289	7,717
	< 18	34	165	114	10	16	339
	< 20	108	384	250	25	39	806
	20 +	2,588	2,251	1,292	530	250	6,911
Brockton	All Ages <sup>2</sup>	766	296	152	40	155	1,409
	< 18	27	16	17	**	¥	73
	< 20	99	43	39	5	28	214
	20 +	667	253	113	35	127	1,195
Cambridge	All Ages <sup>2</sup>	549	177	94	115	30	965
	< 18	**	7	**	**	3	16
	< 20	13	23	6	**	**	46
	20 +	536	154	88	¥	¥	919
Chelsea	All Ages <sup>2</sup>	138	49	371	33	20	611
	< 18	7	**	27	**	2	38
	< 20	15	**	68	**	6	92
	20 +	123	¥	303	¥	14	519
Chicopee	All Ages <sup>2</sup>	507	14	68	7	3	599
	< 18	13	**	8	0	**	22
	< 20	46	**	15	0	**	65
	20 +	461	¥	53	7	**	534



**Table 24. (Continued)**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1996**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Fall River	All Ages <sup>2</sup>	1,035	21	28	34	6	1,124
	< 18	48	0	**	0	**	52
	< 20	144	**	6	**	1	156
	20 +	891	¥	22	¥	5	968
Fitchburg	All Ages <sup>2</sup>	358	24	109	42	4	537
	< 18	19	**	21	**	0	43
	< 20	39	7	50	6	0	102
	20 +	319	17	59	36	4	435
Framingham	All Ages <sup>2</sup>	609	53	159	59	51	931
	< 18	10	**	10	**	0	22
	< 20	21	**	20	**	2	47
	20 +	588	¥	139	¥	49	884
Haverhill	All Ages <sup>2</sup>	789	10	86	17	8	910
	< 18	15	**	6	0	**	22
	< 20	52	**	15	0	**	69
	20 +	737	¥	71	17	¥	841
Holyoke	All Ages <sup>2</sup>	250	14	441	6	9	720
	< 18	8	0	74	0	2	84
	< 20	28	**	159	0	**	192
	20 +	222	¥	282	6	¥	528
Lawrence	All Ages <sup>2</sup>	347	34	816	37	17	1,251
	< 18	17	**	97	**	1	118
	< 20	50	6	222	**	**	284
	20 +	297	28	594	¥	¥	967
Leominster	All Ages <sup>2</sup>	483	18	90	26	7	624
	< 18	11	**	10	**	0	25
	< 20	37	**	29	**	0	74
	20 +	446	¥	61	¥	7	550



**Table 24. (Continued)**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1996**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Lowell	All Ages <sup>2</sup>	906	63	307	341	26	1,643
	< 18	29	**	44	26	**	107
	< 20	90	9	92	41	6	238
	20 +	816	54	215	300	20	1,405
Lynn	All Ages <sup>2</sup>	645	155	342	126	46	1,314
	< 18	24	8	23	8	4	67
	< 20	63	18	60	14	7	162
	20 +	582	137	282	112	39	1,152
Methuen	All Ages <sup>2</sup>	469	7	76	20	7	579
	< 18	8	0	6	0	0	14
	< 20	24	0	17	0	1	42
	20 +	445	7	59	20	6	537
New Bedford	All Ages <sup>2</sup>	907	65	172	8	95	1,247
	< 18	31	**	27	0	¥	71
	< 20	120	12	60	**	¥	218
	20 +	787	53	112	¥	¥	1,029
Pittsfield	All Ages <sup>2</sup>	531	30	10	8	9	588
	< 18	19	6	**	0	**	26
	< 20	45	8	**	0	**	56
	20 +	486	22	¥	8	¥	532
Plymouth	All Ages <sup>2</sup>	612	9	5	1	13	640
	< 18	17	**	0	0	**	20
	< 20	35	**	0	**	3	41
	20 +	577	¥	5	**	10	599
Quincy	All Ages <sup>2</sup>	760	34	18	185	17	1,014
	< 18	11	0	0	0	0	11
	< 20	31	**	**	**	0	39
	20 +	729	¥	¥	¥	17	975

**Table 24. (Continued)**  
**Births by Mother's Age and Race/Hispanic Ethnicity**  
**for Selected Communities<sup>1</sup>**  
**Massachusetts: 1996**

Community	Births	White*	Black*	Hispanic	Asian*	Other/ Unknown	Total
Salem	All Ages <sup>2</sup>	422	13	77	13	16	541
	< 18	11	**	7	0	**	19
	< 20	23	**	13	0	**	41
	20 +	399	¥	64	13	¥	500
Somerville	All Ages <sup>2</sup>	549	118	172	82	33	954
	< 18	21	**	5	**	1	30
	< 20	35	12	18	**	**	71
	20 +	514	106	154	¥	¥	883
Southbridge	All Ages <sup>2</sup>	143	1	66	9	0	219
	< 18	**	0	11	0	**	15
	< 20	15	**	22	**	0	39
	20 +	128	**	44	¥	0	180
Springfield	All Ages <sup>2</sup>	943	498	749	63	25	2,278
	< 18	37	63	114	**	**	218
	< 20	98	140	238	8	7	491
	20 +	845	358	511	55	18	1,787
Taunton	All Ages <sup>2</sup>	692	24	40	6	17	779
	< 18	26	**	9	0	**	40
	< 20	69	10	16	0	3	98
	20 +	623	14	24	6	14	681
Worcester	All Ages <sup>2</sup>	1,409	183	457	164	40	2,253
	< 18	37	11	73	**	¥	129
	< 20	123	31	139	9	8	310
	20 +	1,286	152	318	155	32	1,943

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\* Non-Hispanic

\*\* Information in cells with values 1-4 (excluding the "Other/Unknown" cells) is suppressed when births are cross-classified by age group and race/ethnicity in order to preserve the confidentiality of these cases. In these cases, additional cells with values less than 5 which enable calculation of the number of cases are also suppressed.

¥ These cells have numbers that are 5 and greater, but the numbers were suppressed to prevent inference of the value of the suppressed cell containing 1-4 cases.

<sup>1</sup> 25 communities with the greatest number of births to teens ages 12-19. In 1996, there were 26 communities due to ties in the numbers of teen births

<sup>2</sup> Includes births of unknown maternal age.

**Table 25.**  
**Birth Characteristics Among Teen Births for Selected Communities<sup>1</sup>**  
**Massachusetts: 1996**

Community	Low Birthweight	Adequacy of Care <sup>2</sup>			Multiparous <sup>3</sup>	
	<2500 g	Adequate	Interm	Inadeq/ None		
	Percent <sup>4</sup>	Percent <sup>4</sup>	Percent <sup>4</sup>	Percent <sup>4</sup>	Number	Percent <sup>4</sup>
<b>Massachusetts</b>	<b>9.4</b>	<b>59.6</b>	<b>31.9</b>	<b>8.5</b>	<b>1,050</b>	<b>18.0</b>
Attleboro	10.3	66.7	33.3	0.0	5	12.8
Boston	14.2	61.4	30.1	8.5	153	19.0
Brockton	10.8	51.7	38.8	9.6	30	14.0
Cambridge	9.1	43.2	50.0	6.8	4	**
Chelsea	11.0	52.8	36.0	11.2	18	19.6
Chicopee	4.6	58.7	33.3	7.9	13	20.0
Fall River	10.9	66.7	26.8	6.5	30	19.2
Fitchburg	13.7	54.0	39.0	7.0	28	27.5
Framingham	10.6	65.2	26.1	8.7	2	**
Haverhill	8.7	74.6	22.4	3.0	12	17.4
Holyoke	10.5	64.9	29.2	5.9	70	36.5
Lawrence	9.2	36.5	48.9	14.6	71	25.0
Leominster	2.7	64.4	31.5	4.1	14	18.9
Lowell	11.5	52.8	35.3	11.9	62	26.1
Lynn	6.5	61.7	31.8	6.5	50	30.9
Methuen	4.8	50.0	39.5	10.5	7	16.7
New Bedford	5.6	61.7	32.1	6.1	45	20.6
Pittsfield	10.7	55.4	35.7	8.9	7	12.5
Plymouth	4.9	58.5	34.1	7.3	4	**
Quincy	5.1	67.6	29.7	2.7	1	**
Salem	7.7	73.7	21.1	5.3	6	14.6
Somerville	8.5	59.4	33.3	7.2	8	11.3
Southbridge	12.8	64.1	25.6	10.3	9	23.1
Springfield	10.6	53.0	34.8	12.2	130	26.5
Taunton	8.2	55.7	32.0	12.4	12	12.2
Worcester	12.3	67.8	25.0	7.2	73	23.5

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\*\* Percentages were not calculated for fewer than five observations.

<sup>1</sup> 25 communities with the greatest number of births to teens ages 12-19. In 1996, there were 26 communities due to ties in the numbers of teen births

<sup>2</sup> Adequacy of Prenatal Care is determined by a calculation that combines trimester of prenatal care registration with the number of prenatal care visits. See Glossary for definitions.

<sup>3</sup> Multiparous mothers have had at least one previous live birth.

<sup>4</sup> Percentages exclude case with unknown values for these categories.

**Table 26.**  
**Expected Educational Attainment and In-Hospital Paternity<sup>1</sup>**  
**Acknowledgment Among Teen Mothers for Selected Communities<sup>2</sup>**  
**Massachusetts: 1996**

Community	Behind Grade Level <sup>3</sup>		Paternity Acknowledgment
	Number	Percent	Percent
<b>Massachusetts</b>	<b>1,485</b>	<b>25.6</b>	<b>62.8</b>
Attleboro	13	34.2	54.8
Boston	147	18.7	45.6
Brockton	57	26.9	59.0
Cambridge	6	13.3	80.0
Chelsea	32	34.8	71.3
Chicopee	23	35.4	81.0
Fall River	54	34.8	79.1
Fitchburg	35	35.0	52.2
Framingham	9	19.1	68.2
Haverhill	25	36.2	66.1
Holyoke	75	39.3	82.6
Lawrence	78	27.7	60.6
Leominster	15	20.3	67.2
Lowell	81	34.3	60.7
Lynn	39	25.0	55.9
Methuen	14	34.1	63.9
New Bedford	63	29.3	67.8
Pittsfield	13	23.2	61.1
Plymouth	8	19.5	57.9
Quincy	3	7.7	59.5
Salem	4	10.3	59.5
Somerville	21	29.6	69.6
Southbridge	14	35.9	85.7
Springfield	150	30.6	55.3
Taunton	25	25.5	61.8
Worcester	106	34.2	61.2

Source: Registry of Vital Records and Statistics, MDPH, 1996.

<sup>1</sup> Paternity acknowledgment: voluntary self-acknowledgment by fathers or acknowledgment through legal action. These data reflect data collected in hospitals, at time of birth, only (see Glossary for further explanation).

<sup>2</sup> 25 communities with the greatest number of births to teens ages 12-19. In 1996, there were 26 communities due to ties in the numbers of teen births.

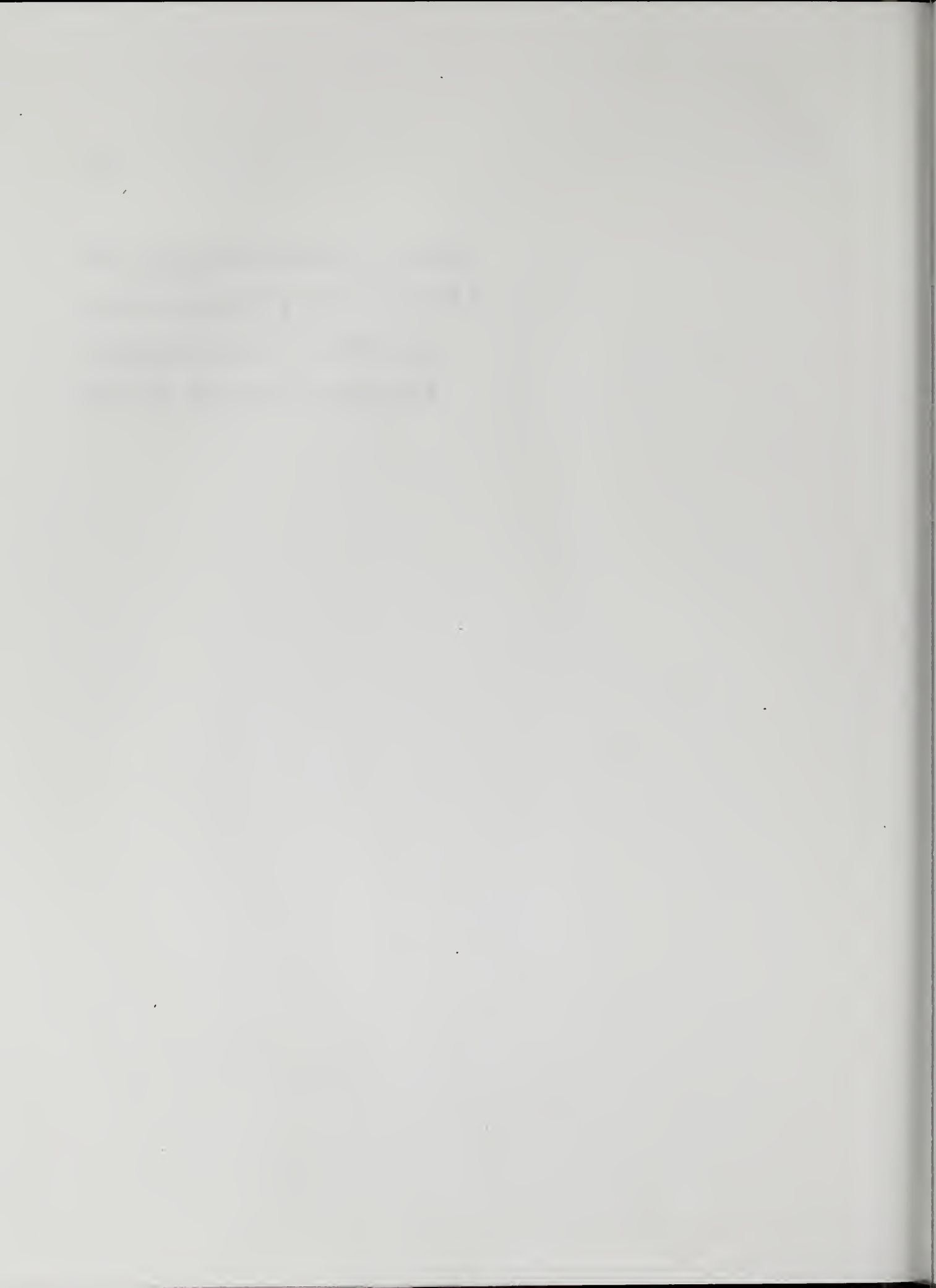
<sup>3</sup> "Behind Grade Level" is defined as one or more grades behind the maximum expected age for a grade at the time of delivery. Adjustments were made for foreign-born students. See Glossary for explanation.





#### *IV.*

### *Birth Characteristics for All 351 MA Communities and the 27 Community Health Network Areas*



**Table 27.**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Massachusetts	80,164	2,235	5,849	3,651	4,006
Abington	282	4	17	10	8
Acton	276	0	2	**	0
Acushnet	89	3	10	9	5
Adams	92	1	6	5	5
Agawam	337	6	23	13	13
Alford	2	0	0	0	0
Amesbury	242	3	13	5	7
Amherst	189	3	12	8	9
Andover	368	2	4	**	0
Arlington	545	1	4	**	**
Ashburnham	50	2	4	**	**
Ashby	30	1	5	**	**
Ashfield	15	0	0	0	0
Ashland	228	0	5	**	**
Athol	145	9	23	18	15
Attleboro	596	12	39	28	26
Auburn	164	1	1	**	**
Avon	55	1	2	0	0
Ayer	114	2	10	7	6
Barnstable	499	7	27	16	13
Barre	56	0	2	**	**
Becket	20	1	2	0	**
Bedford	244	2	5	5	**

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Belchertown	151	1	4	**	**
Bellingham	212	2	7	**	**
Belmont	284	4	5	**	**
Berkley	85	1	4	**	**
Berlin	28	0	1	**	**
Bernardston	11	1	2	**	**
Beverly	491	6	16	11	10
Billerica	573	12	26	15	13
Blackstone	94	1	3	**	**
Blandford	11	0	0	0	0
Bolton	57	0	1	**	**
Boston	7,717	339	806	504	574
Bourne	224	4	18	9	12
Boxborough	73	0	0	0	0
Boxford	105	0	0	0	0
Boylston	46	0	0	0	0
Braintree	451	2	12	8	6
Brewster	73	0	2	**	**
Bridgewater	272	5	12	8	6
Brimfield	33	1	5	5	**
Brockton	1,409	73	214	128	148
Brookfield	23	2	3	0	**
Brookline	608	3	9	**	8
Buckland	17	0	1	**	**
Burlington	303	0	2	**	0
Cambridge	965	16	46	23	22

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Canton	253	1	4	**	**
Carlisle	55	0	0	0	0
Carver	130	0	4	**	**
Charlemont	12	2	2	**	**
Charlton	150	3	11	5	**
Chatham	35	0	4	**	**
Chelmsford	457	1	7	5	**
Chelsea	611	38	92	48	64
Cheshire	35	1	3	**	**
Chester	11	0	0	0	0
Chesterfield	18	0	1	**	**
Chicopee	599	22	65	38	50
Chilmark	8	0	0	0	0
Clarksburg	14	0	0	0	0
Clinton	164	6	15	9	9
Cohasset	91	1	2	**	0
Colrain	19	0	1	**	**
Concord	165	0	0	0	0
Conway	13	0	1	**	**
Cummington	5	0	**	**	**
Dalton	70	0	4	**	**
Danvers	266	0	2	**	**
Dartmouth	233	5	16	12	11
Dedham	289	2	7	5	**
Deerfield	51	2	2	**	**
Dennis	109	2	9	7	6



**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Dighton	61	2	4	**	**
Douglas	99	0	6	5	**
Dover	66	0	0	0	0
Dracut	427	7	20	10	11
Dudley	102	4	16	12	10
Dunstable	46	0	0	0	0
Duxbury	164	0	2	**	0
East Bridgewater	176	2	5	**	**
East Brookfield	30	2	2	**	**
East Longmeadow	152	0	2	**	0
Eastham	31	0	1	**	**
Easthampton	161	5	16	10	16
Easton	273	1	6	**	**
Edgartown	49	1	2	**	**
Egremont	5	0	0	0	0
Erving	14	0	3	**	**
Essex	42	0	0	0	0
Everett	536	12	30	16	23
Fairhaven	143	0	14	9	8
Fall River	1,124	52	156	103	122
Falmouth	295	9	29	17	18
Fitchburg	537	43	102	60	75
Florida	7	0	0	0	0
Foxborough	220	1	5	5	**
Framingham	931	22	47	30	32
Franklin	467	1	10	10	**

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Freetown	86	4	7	**	5
Gardner	254	11	28	20	18
Gay Head	2	0	0	0	0
Georgetown	106	0	2	**	**
Gill	11	0	0	0	0
Gloucester	388	9	32	25	20
Goshen	6	0	0	0	0
Gosnold	1	0	0	0	0
Grafton	185	2	5	**	0
Granby	67	0	0	0	0
Granville	21	0	1	**	**
Great Barrington	60	0	2	**	**
Greenfield	202	10	26	13	22
Groton	136	0	0	0	0
Groveland	78	1	3	**	0
Hadley	43	1	1	**	**
Halifax	84	0	3	**	**
Hamilton	122	0	2	**	**
Hampden	40	1	2	**	**
Hancock	10	0	0	0	0
Hanover	168	1	2	**	0
Hanson	138	3	6	**	**
Hardwick	26	0	2	**	0
Harvard	45	0	0	0	0
Harwich	103	2	6	5	**
Hatfield	29	0	1	**	**

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Haverhill	910	22	69	54	50
Hawley	1	0	0	0	0
Heath	5	0	0	0	0
Hingham	253	0	4	**	**
Hinsdale	15	0	0	0	0
Holbrook	135	0	6	**	**
Holden	153	0	3	**	**
Holland	18	0	0	0	0
Holliston	176	1	2	**	**
Holyoke	720	84	192	129	175
Hopedale	77	0	0	0	0
Hopkinton	220	1	4	**	**
Hubbardston	55	4	6	**	**
Hudson	253	2	15	12	7
Hull	143	4	12	11	7
Huntington	24	0	4	**	**
Ipswich	143	0	4	**	**
Kingston	177	1	7	**	**
Lakeville	131	2	8	5	**
Lancaster	69	0	2	**	**
Lanesborough	32	0	1	**	**
Lawrence	1,251	118	284	139	217
Lee	63	1	5	**	5
Leicester	134	2	10	5	**
Lenox	37	0	1	**	**
Leominster	624	25	74	48	44

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Leverett	14	0	0	0	0
Lexington	274	0	2	**	0
Leyden	5	0	0	0	0
Lincoln	47	0	0	0	0
Littleton	140	0	1	**	**
Longmeadow	126	2	2	0	**
Lowell	1,643	107	238	133	188
Ludlow	190	5	8	**	**
Lunenburg	102	2	5	**	**
Lynn	1,314	67	162	99	126
Lynnfield	117	1	2	**	0
Malden	775	14	38	15	22
Manchester	60	0	1	**	**
Mansfield	403	3	10	8	6
Marblehead	258	1	1	**	**
Marion	36	0	2	**	**
Marlborough	571	19	37	28	26
Marshfield	371	3	10	5	**
Mashpee	145	3	8	**	5
Mattapoisett	46	1	1	**	**
Maynard	170	1	1	**	**
Medfield	189	0	0	0	0
Medford	665	8	22	14	12
Medway	192	2	7	6	**
Melrose	361	1	4	**	**
Mendon	58	0	0	0	0

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Merrimac	87	0	2	**	**
Methuen	579	14	42	24	24
Middleborough	284	6	16	11	6
Middlefield	9	0	0	0	0
Middleton	91	1	3	**	**
Milford	366	7	19	12	8
Millbury	144	3	8	7	**
Millis	142	1	2	**	**
Millville	54	2	2	**	**
Milton	311	3	7	6	5
Monroe	1	0	**	**	**
Monson	87	1	3	**	**
Montague	101	3	10	7	8
Monterey	8	0	0	0	0
Montgomery	8	0	0	0	0
Mount Washington	1	0	0	0	0
Nahant	31	1	2	**	0
Nantucket	90	1	4	0	**
Natick	498	3	6	**	**
Needham	377	0	0	0	0
New Ashford	0	0	0	0	0
New Bedford	1,247	71	218	133	173
New Braintree	6	**	**	**	**
New Marlborough	10	0	1	**	**
New Salem	6	0	0	0	0
Newbury	77	2	3	**	0



**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Newburyport	206	8	10	**	9
Newton	878	5	10	6	**
Norfolk	139	1	1	**	**
North Adams	158	14	34	20	26
North Andover	338	2	6	**	**
North Attleborough	406	3	16	12	10
North Brookfield	55	1	4	**	**
North Reading	204	2	5	**	**
Northampton	239	1	8	**	6
Northborough	187	1	3	**	**
Northbridge	198	2	12	7	**
Northfield	35	1	1	**	**
Norton	287	3	8	**	5
Norwell	120	0	1	**	**
Norwood	388	6	10	6	7
Oak Bluffs	39	0	0	0	0
Oakham	17	0	1	**	**
Orange	84	7	10	5	6
Orleans	38	1	1	**	**
Otis	14	0	1	**	**
Oxford	174	3	16	11	5
Palmer	141	6	14	9	6
Paxton	30	0	0	0	0
Peabody	565	10	23	17	14
Pelham	9	**	**	**	**
Pembroke	269	2	3	**	0

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Pepperell	174	4	8	**	**
Peru	4	0	0	0	0
Petersham	16	0	0	0	0
Phillipston	14	0	0	0	0
Pittsfield	588	26	56	37	37
Plainfield	5	0	0	0	0
Plainville	99	2	3	**	**
Plymouth	640	20	41	25	26
Plympton	24	1	1	**	**
Princeton	43	0	1	**	**
Provincetown	17	0	0	0	0
Quincy	1,014	11	39	26	19
Randolph	378	7	15	11	6
Raynham	146	6	10	8	7
Reading	298	2	4	**	**
Rehoboth	99	1	3	**	0
Revere	553	14	38	20	25
Richmond	12	0	0	0	0
Rochester	49	0	0	0	0
Rockland	231	4	11	8	**
Rockport	69	0	0	0	0
Rowe	3	0	0	0	0
Rowley	63	0	0	0	0
Royalston	10	0	0	0	0
Russell	23	1	2	**	**
Rutland	76	0	5	**	5

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Salem	541	19	41	28	22
Salisbury	90	2	5	**	**
Sandisfield	10	0	0	0	0
Sandwich	241	3	8	5	7
Saugus	277	2	8	**	5
Savoy	10	1	1	**	**
Scituate	217	0	0	0	0
Seekonk	129	0	6	5	**
Sharon	217	0	1	**	**
Sheffield	38	0	0	0	0
Shelburne	17	0	1	**	**
Sherborn	46	0	0	0	0
Shirley	82	3	5	**	**
Shrewsbury	399	3	10	8	6
Shutesbury	19	0	0	0	0
Somerset	127	8	15	13	5
Somerville	954	30	71	44	47
South Hadley	149	3	9	5	5
Southampton	65	2	4	**	**
Southborough	143	0	0	0	0
Southbridge	219	15	39	26	28
Southwick	105	0	0	0	0
Spencer	146	4	12	11	7
Springfield	2,278	218	491	285	429
Sterling	86	0	2	0	0
Stockbridge	13	0	0	0	0

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Stoneham	230	0	4	**	**
Stoughton	312	4	14	8	**
Stow	87	0	1	**	**
Sturbridge	83	2	3	**	**
Sudbury	229	0	1	**	**
Sunderland	37	1	4	**	**
Sutton	119	0	1	**	**
Swampscott	169	1	5	5	0
Swansea	127	1	4	**	**
Taunton	779	40	98	58	60
Templeton	77	0	2	**	**
Tewksbury	412	1	4	**	**
Tisbury	32	0	0	0	0
Tolland	4	0	0	0	0
Topsfield	72	0	0	0	0
Townsend	120	2	7	**	**
Truro	11	0	0	0	0
Tyngsborough	175	1	6	**	**
Tyringham	0	0	0	0	0
Upton	127	1	1	**	**
Uxbridge	173	5	11	8	**
Wakefield	334	1	4	**	**
Wales	20	0	2	**	**
Walpole	299	4	4	**	**
Waltham	743	12	33	22	20
Ware	121	8	21	13	18

**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Wareham	237	9	25	19	13
Warren	61	1	8	8	**
Warwick	8	**	**	**	**
Washington	7	0	0	0	0
Watertown	422	0	7	6	**
Wayland	163	0	1	**	**
Webster	185	7	22	13	12
Wellesley	341	0	3	**	**
Wellfleet	26	0	0	0	0
Wendell	3	0	0	0	0
Wenham	38	0	0	0	0
West Boylston	65	0	3	**	0
West Bridgewater	93	4	6	5	**
West Brookfield	37	0	2	**	**
West Newbury	65	1	1	**	**
West Springfield	309	9	23	15	13
West Stockbridge	15	0	1	**	**
West Tisbury	20	0	0	0	0
Westborough	210	2	3	**	**
Westfield	475	9	29	18	21
Westford	298	2	4	**	**
Westhampton	21	0	1	**	**
Westminster	62	0	2	**	**
Weston	102	0	0	0	0
Westport	127	4	9	7	7
Westwood	177	0	0	0	0



**Table 27. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**351 Massachusetts Communities: 1996**

Community	All Ages	Number of Births		Prenatal Care (<20 Years)	
	Number of Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
Weymouth	747	8	27	20	11
Whately	12	0	0	0	0
Whitman	200	2	3	**	**
Wilbraham	119	1	2	**	**
Williamsburg	18	0	3	**	**
Williamstown	33	0	0	0	0
Wilmington	333	2	6	**	**
Winchendon	130	3	19	14	15
Winchester	245	0	0	0	0
Windsor	11	1	1	**	**
Winthrop	211	1	4	**	**
Woburn	432	2	14	10	7
Worcester	2,253	129	310	220	230
Worthington	8	0	0	0	0
Wrentham	183	1	1	**	**
Yarmouth	190	4	10	5	**

Source: Registry of Vital Records and Statistics, MDPH, 1996.

\*\* For communities where "Number of Births to All Ages" is less than 10, cells with values of 1-4 are suppressed. For all communities, "Prenatal Care (< 20 Years)" cells with values of 1-4 suppressed. For communities where the number of teen births ("<20 Years") equals one, prenatal care cells are suppressed. Cells have also been suppressed in those instances where the publication of cell values would lead to inadvertent identification of individuals.

**Table 28.**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1996**

Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
<b>Massachusetts</b>	<b>80,164</b>	<b>2,235</b>	<b>5,849</b>	<b>3,651</b>	<b>4,006</b>
1 Community Health Network of Berkshire County	1,394	46	119	75	89
2 Greater Franklin/North Quabbin CHNA	901	37	89	56	63
3 Greater Northampton Area Partnership for Health	1,313	25	83	53	66
3.1 Greater Holyoke Area	2,019	120	298	189	251
4 Greater Springfield Community Health Network	3,761	245	565	332	470
5 Greater Southbridge	1,336	45	145	99	81
6 Greater Milford Community Partners for Health	2,236	23	79	55	29
7 Greater Framingham Area	5,383	62	142	100	85
8 Greater Worcester Area CHNA	3,573	140	350	249	244
9 Fitchburg/Gardner Area	3,220	109	311	195	195
10 Greater Lowell Community Health Network	4,031	131	305	171	222
11 Greater Lawrence Area	2,627	137	339	174	244
12 Greater Haverhill Area	2,029	39	108	75	72
13 Beverly/Gloucester Area	1,425	15	55	40	34
14 North Shore Community Health Network	3,538	102	246	157	169
15 Greater Woburn/Concord/Littleton Area	2,587	6	32	24	13
16 Malden/Medford/Melrose Area	3,403	40	111	59	66
17 Somerville/Cambridge Area	3,170	51	133	79	76
18 Newton/Waltham West Suburban Health Network	2,973	19	53	36	27
19 Alliance for Community Health (Boston)	9,700	395	949	577	673
20 Blue Hills Community Health Alliance	4,583	43	134	98	68

**Table 28. (Continued)**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 1996**

Community Health Network Areas (CHNA)	All Ages	Teens			
	Number of Births	Number of Births		Prenatal Care (< 20 Years)	
		< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds
22 Greater Brockton Community Health Network	3,207	96	285	167	178
23 Greater Plymouth South Shore	2,396	35	90	57	40
24 Greater Attleboro/Taunton Area	3,407	79	222	145	126
25 Greater Fall River Area	1,505	65	184	125	135
26 Greater New Bedford Area	2,166	93	293	188	217
27 Cape Cod and the Islands	2,278	37	129	76	73

Source: Registry of Vital Records and Statistics, MDPH, 1996.

<sup>1</sup> While the CHNA number designations are no longer used, they are provided in this table to correspond with Community Health Network Area definition and city/town groupings found in the Appendix.

## *Appendix*

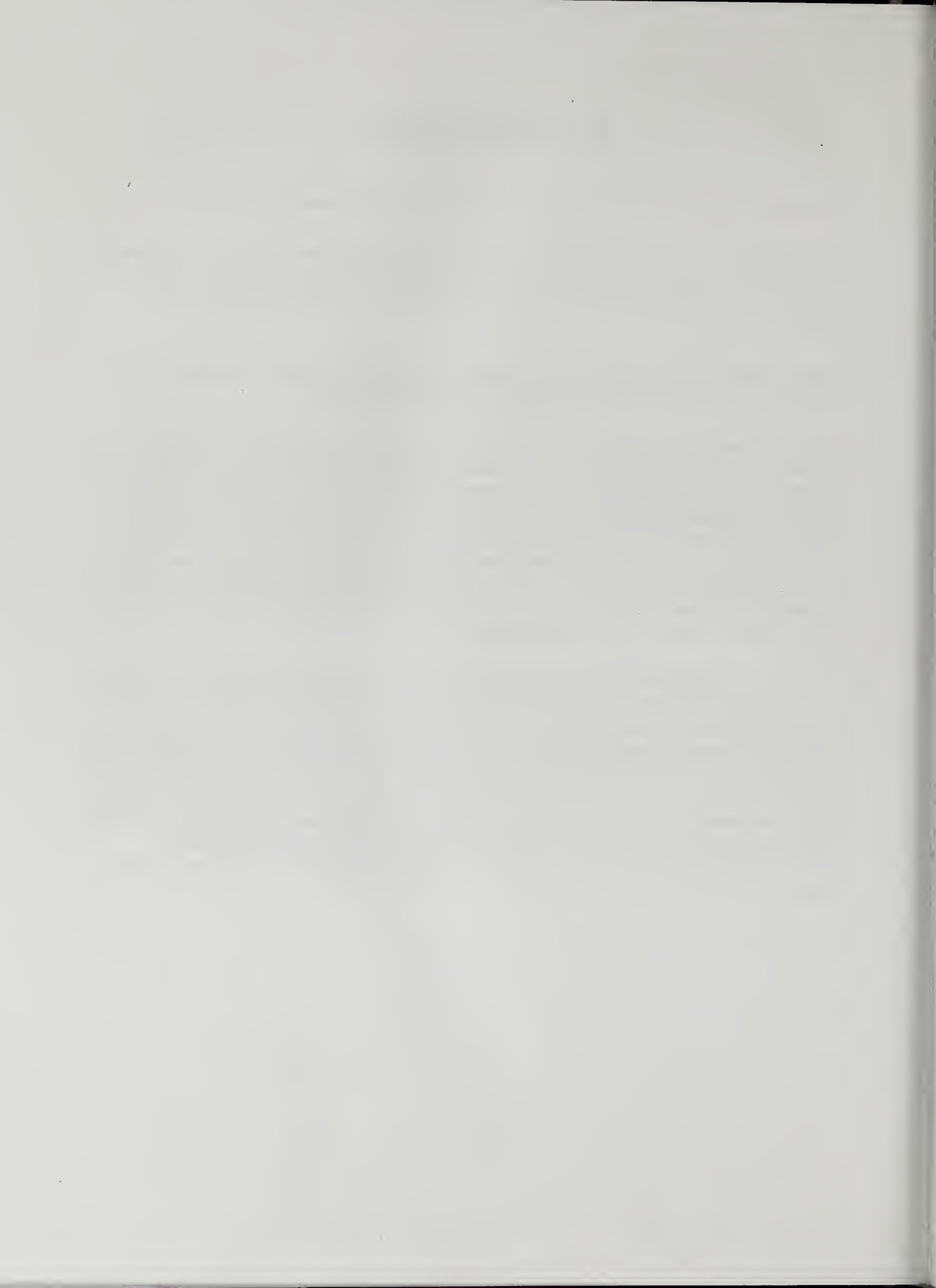




## Technical Notes

We recommend that the following cautions be kept in mind when examining the data:

- In cases where there are small numbers of teen births, especially at the city/town level and by race/ethnicity or age, small changes in the numbers from year to year will produce large changes in percentages, making the differences appear more significant than they are in reality.
- Unless otherwise stated, percentages are based on the number of births or mothers that have known information regarding a demographic or birth characteristic.
- Birth rates (number of births per 1,000 women) are calculated using Census counts of the resident population of Massachusetts. Because the Census is taken only once every ten years, the annual number of residents in each city/town and in the state for non-Census years are projected estimates, not actual counts. Therefore, the numbers of resident women may be underestimated (resulting in inflated birth rates), or overestimated (resulting in lower birth rates). *Please note that the population estimates for 1991-1996 were revised in June 1997. As a result, the birth rates for these years were recalculated for this publication and should be considered the most accurate available. It is advisable not compare birth rate data from this publication with previously published data.*
- The infant mortality rate for women under the age of 20 is not yet available for the 1996 year of released birth and death data. In order to get an accurate count of deaths to infants born in 1996, it is necessary to link the birth and death files over a three year period (1995-1997). Those infant deaths resulting from births in 1995 must be removed from the 1996 deaths data set; those births in 1996 that resulted in deaths in 1997 must be added to the 1996 death file; and finally there are those births in 1996 that ended in death in the same year. The resulting file is then linked to the 1996 birth file, and this linked file becomes the source for calculating maternal age-specific infant mortality rates. Because the 1997 death file data was not available at the time of this report, 1995 data were used, linking 1994-1996 birth and death files.



## *Glossary*

**Adequacy of Prenatal Care:** Adequacy of prenatal care is calculated from information reported by the birth hospital. The index of Adequacy of Prenatal Care (based on the Kessner Index) has three categories (adequate, intermediate, inadequate/none) based on the trimester in which prenatal care began and the number of prenatal visits. The general classification scheme is:

<u>Category</u>	<u>Trimester Care Began</u>	<u>Number of Visits</u>
Adequate	1	9 or more
Intermediate	1	5-8
	2	5 or more
Inadequate/None	1	1-4
	2	1-4
	3	1 or more

The classification is adjusted for gestational age to allow for proper classification of premature infants. *See Foreword.*

**Birth Rate:** see Teen Birth Rate.

**Birthweight Categories:** Birthweight is the weight of an infant recorded at the time of delivery.

**Normal Birthweight (NBW):** An infant's weight of 2,500 grams (5.5 pounds) or more

**Low Birthweight (LBW):** An infant's weight of less than 2,500 grams (5.5 pounds)

**Very Low Birthweight (VLBW):** An infant's weight of less than 1,500 grams (3.3 pounds)

**Education:** Education is self-reported on the birth certificate by the mother and indicates the highest grade or total number of years of schooling she has completed.

**Ethnicity:** Mother's ethnicity is self-reported.

**Expected Educational Attainment:** The maximum expected age of a student in a particular school grade. Teen mothers were classified as being at least one grade behind if they were two or more years older than the maximum expected age for the reported grade level. For example, if a teen is 16 years old and reports she has completed eighth grade, then she is at least one year behind the expected age for that grade. The following age-for grade cutoffs were used:

<u>Grade</u>	<u>Maximum Expected Age</u>
6th	12
7th	13
8th	14
9th	15
10th	16
11th	17
12th	18

Due to language or educational differences, foreign-born youth are often placed in school at least one grade behind the expected grade. As a result, the foreign-born teen mothers were classified as being at least one grade behind if they were *three* or more years older than the maximum expected.

**Gestational Age:** The length of time a fetus is *in utero* before birth. In this publication, the clinical estimate of gestational age has been used for analysis. Clinical gestational age is determined by the attendant at birth or a physician providing postnatal care to the newborn. A normal gestational age is defined as delivery between the completion of the 37th and the 42nd week of pregnancy.

**Healthy Start:** Healthy Start is a Massachusetts-funded program providing services and financing for prenatal care to low-income (up to 200% of the poverty level) pregnant women who lack health insurance but do not qualify for Medicaid.

**Infant Mortality:** The death of a child under 1 year of age ( $\leq 364$  days old).

**Infant Mortality Rate (IMR):** The number of infant deaths in a year divided by the number of births in that year, multiplied by 1,000 to express the rate per 1,000 live births.

**Live Birth:** A live birth is defined as any infant who breathes or shows any other evidence of life (such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles) after delivery. All figures and tables in this report, showing Massachusetts data, are based on live births to Massachusetts residents (see Resident Birth).

**Low Birthweight (LBW):** see Birthweight Categories.

**Normal Birthweight:** see Birthweight Categories.

**Mother's Age:** Mother's age is computed from her date of birth and the date of delivery.



**Multiparous:** A multiparous mother is one who has had at least one previous live birth.

**Parity:** The number of live infants ever born to the mother. Parity includes all previous live births as well as the infant named on the birth certificate.

**Paternity Acknowledgement:** The process by which the paternity of an infant is legally established when the parents are unmarried. As part of the birth registration process, parents sign an acknowledgement form and their signatures are notarized. The father's information is then added to the child's birth certificate. Paternity can also be acknowledged at a town clerk's office after the mother and child have been discharged from the hospital. Paternity may be established through legal action or through voluntary acknowledgement in the case of unmarried couples; when a couple is married, the husband is legally considered the infant's father. *Paternity acknowledgement data in this report reflect voluntary self-acknowledgement data collected in hospitals, at time of birth only.*

**Prenatal Care Payment Source:** Prenatal care payment source is self-reported by the mother. Groupings include:

- |            |   |
|------------|---|
| Private:   | Blue Cross/Blue Shield, commercial insurance, and health maintenance organizations (HMOs). The HMO category may include Medicaid recipients in managed care programs. |
| Public:    | Medicaid, Healthy Start, Medicare and other government sources (e.g., CHAMPUS).   |
| Uninsured: | Care paid for out of pocket or provided free of charge.   |
| Other:     | Workers' Compensation and other specified types of funding not classified elsewhere.  |

**Race/Hispanic Ethnicity:** Mother's race and Hispanic ethnicity are self-reported.

**Resident Birth:** Resident birth is defined as the birth of an infant whose mother reports her usual place of residence as Massachusetts. In Massachusetts, a resident is a person with a permanent address in one of the 351 cities or towns. Massachusetts resident births include all births that occur among residents of the Commonwealth whether they occur in Massachusetts or elsewhere.

**Teen Birth Rate:** The number of children born among females ages 15 to 19 divided by the population of females in that age group, multiplied by 1,000.

**Very Low Birthweight (VLBW):** see Birthweight Categories.



**1996 Population Estimates of Females Ages 15 to 19 Years Living in  
25 Massachusetts Communities with the Highest Number of  
Teen Births in 1996**

<u>Community</u>	<u>Estimated Number of Females, Ages 15-19 years</u>
<b>Massachusetts</b>	<b>176,798</b>
Attleboro	974
Boston	18,011
Brockton	2,797
Cambridge	3,147
Chelsea	970
Chicopee	1,710
Fall River	2,717
Fitchburg	1,622
Framingham	1,712
Haverhill	1,443
Holyoke	1,832
Lawrence	3,320
Leominster	1,051
Lowell	3,647
Lynn	2,464
Methuen	828
New Bedford	3,345
Pittsfield	950
Plymouth	1,464
Quincy	1,458
Salem	1,066
Somerville	1,816
Southbridge	532
Springfield	5,807
Taunton	1,399
Worcester	6,090

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Source: 1996 estimates from the Massachusetts Institute for Social and Economic Research (MISER).

Massachusetts Cities, Towns, Counties, and Community Health Network Areas (CHNAs)

City/Town	County	CHNA	City/Town	County	CHNA
Abington	Plymouth	22	Dartmouth	Bristol	26
Acton	Middlesex	15	Dedham	Norfolk	18
Acushnet	Bristol	26	Deerfield	Franklin	2
Adams	Berkshire	1	Dennis	Barnstable	27
Agawam	Hampden	4	Dighton	Bristol	24
Alford	Berkshire	1	Douglas	Worcester	6
Amesbury	Essex	12	Dover	Norfolk	18
Amherst	Hampshire	3	Dracut	Middlesex	10
Andover	Essex	11	Dudley	Worcester	5
Arlington	Middlesex	17	Dunstable	Middlesex	10
Ashburnham	Worcester	9	Duxbury	Plymouth	23
Ashby	Middlesex	9	East Bridgewater	Plymouth	22
Ashfield	Franklin	2	East Brookfield	Worcester	5
Ashland	Middlesex	7	East Longmeadow	Hampden	4
Athol	Worcester	2	Eastham	Barnstable	27
Attleboro	Bristol	24	Easthampton	Hampshire	3
Auburn	Worcester	8	Easton	Bristol	22
Avon	Norfolk	22	Edgartown	Dukes	27
Ayer	Middlesex	9	Egremont	Berkshire	1
Barnstable	Barnstable	27	Erving	Franklin	2
Barre	Worcester	9	Essex	Essex	13
Becket	Berkshire	1	Everett	Middlesex	16
Bedford	Middlesex	15	Fairhaven	Bristol	26
Belchertown	Hampshire	3	Fall River	Bristol	25
Bellingham	Norfolk	6	Falmouth	Barnstable	27
Belmont	Middlesex	17	Fitchburg	Worcester	9
Berkley	Bristol	24	Florida	Berkshire	1
Berlin	Worcester	9	Foxborough	Norfolk	7
Bernardston	Franklin	2	Frammingham	Middlesex	7
Beverly	Essex	13	Franklin	Norfolk	6
Billerica	Middlesex	10	Freetown	Bristol	26
Blackstone	Worcester	6	Gardner	Worcester	9
Blandford	Hampden	4	Gay Head	Dukes	27
Bolton	Worcester	9	Georgetown	Essex	12
Boston	Suffolk	19	Gill	Franklin	2
Bourne	Barnstable	27	Gloucester	Essex	13
Boxborough	Middlesex	15	Goshen	Hampshire	3
Boxford	Essex	12	Gosnold	Dukes	27
Boylston	Worcester	8	Grafton	Worcester	8
Braintree	Norfolk	20	Granby	Hampshire	3
Brewster	Barnstable	27	Granville	Hampden	4
Bridgewater	Plymouth	22	Great Barrington	Berkshire	1
Brimfield	Hampden	5	Greenfield	Franklin	2
Brockton	Plymouth	22	Groton	Middlesex	9
Brookfield	Worcester	5	Groveland	Essex	12
Brookline	Norfolk	19	Hadley	Hampshire	3
Buckland	Franklin	2	Halifax	Plymouth	23
Burlington	Middlesex	15	Hamilton	Essex	13
Cambridge	Middlesex	17	Hampden	Hampden	4
Canton	Norfolk	20	Hancock	Berkshire	1
Carlisle	Middlesex	15	Hanover	Plymouth	23
Carver	Plymouth	23	Hanson	Plymouth	23
Charlemont	Franklin	2	Hardwick	Worcester	9
Charlton	Worcester	5	Harvard	Worcester	9
Chatham	Barnstable	27	Harwich	Barnstable	27
Chelmsford	Middlesex	10	Hatfield	Hampshire	3
Chelsea	Suffolk	19	Haverhill	Essex	12
Cheshire	Berkshire	1	Hawley	Franklin	2
Chester	Hampden	3.1	Heath	Franklin	2
Chesterfield	Hampshire	3	Hingham	Plymouth	20
Chicopee	Hampden	3.1	Hinsdale	Berkshire	1
Chilmark	Dukes	27	Holbrook	Norfolk	22
Clarksburg	Berkshire	1	Holden	Worcester	8
Clinton	Worcester	9	Holland	Hampden	5
Cohasset	Norfolk	20	Holliston	Middlesex	7
Colrain	Franklin	2	Holyoke	Hampden	3.1
Concord	Middlesex	15	Hopedale	Worcester	6
Conway	Franklin	2	Hopkinton	Middlesex	7
Cummington	Hampshire	3	Hubbardston	Worcester	9
Dalton	Berkshire	1	Hudson	Middlesex	7
Danvers	Essex	14	Hull	Plymouth	20

City/Town	County	CHNA	City/Town	County	CHNA
Huntington	Hampshire	3.1	Northampton	Hampshire	3
Ipswich	Essex	13	Northborough	Worcester	7
Kingston	Plymouth	23	Northbridge	Worcester	6
Lakeville	Plymouth	24	Northfield	Franklin	2
Lancaster	Worcester	9	Norton	Bristol	24
Lanesborough	Berkshire	1	Norwell	Plymouth	20
Lawrence	Essex	11	Norwood	Norfolk	20
Lee	Berkshire	1	Oak Bluffs	Dukes	27
Leicester	Worcester	8	Oakham	Worcester	9
Lenox	Berkshire	1	Orange	Franklin	2
Leominster	Worcester	9	Orleans	Barnstable	27
Leverett	Franklin	2	Otis	Berkshire	1
Lexington	Middlesex	15	Oxford	Worcester	5
Leyden	Franklin	2	Palmer	Hampden	4
Lincoln	Middlesex	15	Paxton	Worcester	8
Littleton	Middlesex	15	Peabody	Essex	14
Longmeadow	Hampden	4	Pelham	Hampshire	3
Lowell	Middlesex	10	Pembroke	Plymouth	23
Ludlow	Hampden	3.1	Pepperell	Middlesex	9
Lunenburg	Worcester	9	Peru	Berkshire	1
Lynn	Essex	14	Petersham	Worcester	2
Lynnfield	Essex	14	Phillipston	Worcester	2
Malden	Middlesex	16	Pittsfield	Berkshire	1
Manchester	Essex	13	Plainfield	Hampshire	3
Mansfield	Bristol	24	Plainville	Norfolk	7
Marblehead	Essex	14	Plymouth	Plymouth	23
Marion	Plymouth	26	Plympton	Plymouth	23
Marlborough	Middlesex	7	Princeton	Worcester	9
Marshfield	Plymouth	23	Provincetown	Barnstable	27
Mashpee	Barnstable	27	Quincy	Norfolk	20
Mattapoisett	Plymouth	26	Randolph	Norfolk	20
Maynard	Middlesex	7	Raynham	Bristol	24
Medfield	Norfolk	7	Reading	Middlesex	14
Medford	Middlesex	16	Rehoboth	Bristol	24
Medway	Norfolk	6	Revere	Suffolk	19
Melrose	Middlesex	14	Richmond	Berkshire	1
Mendon	Worcester	6	Rochester	Plymouth	26
Merrimac	Essex	12	Rockland	Plymouth	23
Methuen	Essex	11	Rockport	Essex	13
Middleborough	Plymouth	24	Rowe	Franklin	2
Middlefield	Hampshire	3	Rowley	Essex	12
Middleton	Essex	11	Royalston	Worcester	2
Milford	Worcester	6	Russell	Hampden	4
Millbury	Worcester	8	Rutland	Worcester	9
Millis	Norfolk	7	Salem	Essex	14
Millville	Worcester	6	Salisbury	Essex	12
Milton	Norfolk	20	Sandisfield	Berkshire	1
Monroe	Franklin	2	Sandwich	Barnstable	27
Monson	Hampden	4	Saugus	Essex	14
Montague	Franklin	2	Savoy	Berkshire	1
Monterey	Berkshire	1	Scituate	Plymouth	20
Montgomery	Hampden	4	Seekonk	Bristol	24
Mt. Washington	Berkshire	1	Sharon	Norfolk	20
Nahant	Essex	14	Sheffield	Berkshire	1
Nantucket	Nantucket	27	Shelburne	Franklin	2
Natick	Middlesex	7	Sherborn	Middlesex	7
Needham	Norfolk	18	Shirley	Middlesex	9
New Ashford	Berkshire	1	Shrewsbury	Worcester	8
New Bedford	Bristol	26	Shutesbury	Franklin	2
New Braintree	Worcester	9	Somerset	Bristol	25
New Marlborough	Berkshire	1	Somerville	Middlesex	17
New Salem	Franklin	2	South Hadley	Hampshire	3
Newbury	Essex	12	Southampton	Hampshire	3
Newburyport	Essex	12	Southborough	Worcester	7
Newton	Middlesex	18	Southbridge	Worcester	5
Norfolk	Norfolk	7	Southwick	Hampden	4
North Adams	Berkshire	1	Spencer	Worcester	5
North Andover	Essex	11	Springfield	Hampden	4
N. Attleborough	Bristol	24	Sterling	Worcester	9
North Brookfield	Worcester	5	Stockbridge	Berkshire	1
North Reading	Middlesex	14	Stoneham	Middlesex	14

City/Town	County	CHNA	
Stoughton	Norfolk	22	
Stow	Middlesex	7	
Sturbridge	Worcester	5	
Sudbury	Middlesex	7	
Sunderland	Franklin	2	
Sutton	Worcester	6	
Swampscott	Essex	14	
Swansea	Bristol	25	
Taunton	Bristol	24	
Templeton	Worcester	9	
Tewksbury	Middlesex	10	
Tisbury	Dukes	27	
Tolland	Hampden	4	
Topsfield	Essex	13	
Townsend	Middlesex	9	
Truro	Barnstable	27	
Tyngsborough	Middlesex	10	
Tyringham	Berkshire	1	
Upton	Worcester	6	
Uxbridge	Worcester	6	
Wakefield	Middlesex	14	
Wales	Hampden	5	
Walpole	Norfolk	7	
Waltham	Middlesex	18	
Ware	Hampshire	3	
Wareham	Plymouth	26	
Warren	Worcester	5	
Warwick	Franklin	2	
Washington	Berkshire	1	
Watertown	Middlesex	17	
Wayland	Middlesex	7	
Webster	Worcester	5	
Wellesley	Norfolk	18	
Wellfleet	Barnstable	27	
Wendell	Franklin	2	
Wenham	Essex	13	
West Boylston	Worcester	8	
West Bridgewater	Plymouth	22	
West Brookfield	Worcester	5	
West Newbury	Essex	12	
West Springfield	Hampden	4	
West Stockbridge	Berkshire	1	
West Tisbury	Dukes	27	
Westborough	Worcester	7	
Westfield	Hampden	3.1	
Westford	Middlesex	10	
Westhampton	Hampshire	3	
Westminster	Worcester	9	
Weston	Middlesex	18	
Westport	Bristol	25	
Westwood	Norfolk	18	
Weymouth	Norfolk	20	
Whately	Franklin	2	
Whitman	Plymouth	22	
Wilbraham	Hampden	4	
Williamsburg	Hampshire	3	
Williamstown	Berkshire	1	
Wilmington	Middlesex	15	
Winchendon	Worcester	9	
Winchester	Middlesex	15	
Windsor	Berkshire	1	
Winthrop	Suffolk	19	
Woburn	Middlesex	15	
Worcester	Worcester	8	
Worthington	Hampshire	3	
Wrentham	Norfolk	7	
Yarmouth	Barnstable	27	

#### Community Health Network Areas

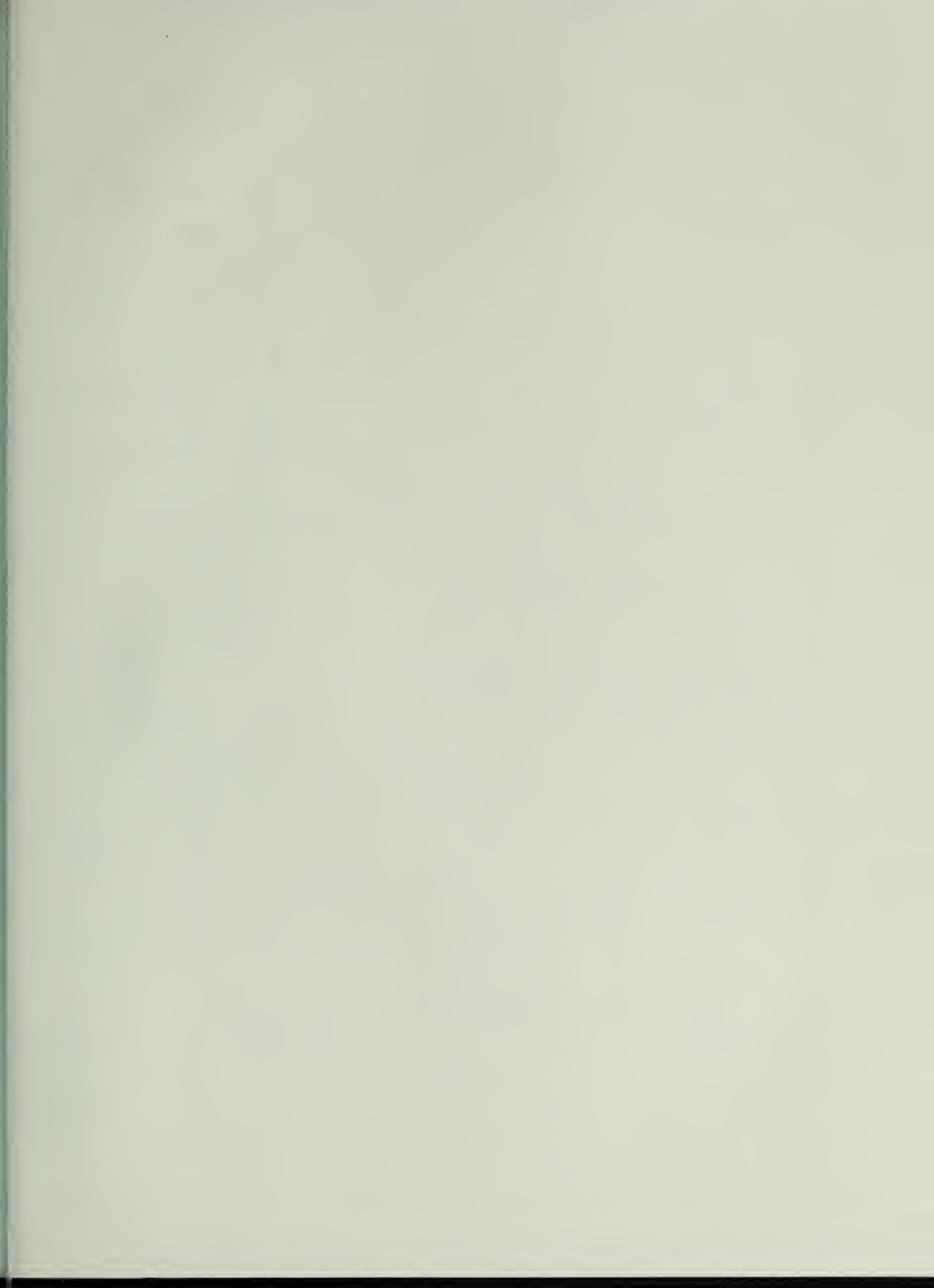
1. Community Health Network of Berkshire County
2. Greater Franklin/North Quabbin CHN
3. Greater Northampton Area Partnership for Health
- 3.1 Greater Holyoke Area
4. Greater Springfield Community Health Network
5. Greater Southbridge
6. Greater Milford Community Partners for Health
7. Greater Framingham Area
8. Greater Worcester Area CHN
9. Fitchburg/Gardner Area
10. Greater Lowell Community Health Network
11. Greater Lawrence Area
12. Greater Haverhill Area
13. Beverly/Gloucester Area
14. North Shore Community Health Network
15. Greater Woburn/Concord/Littleton Area
16. Malden/Medford/Melrose Area
17. Somerville/Cambridge Area
18. Newton/Waltham West Suburban Health Network
19. Alliance for Community Health
20. Blue Hills Community Health Alliance
22. Greater Brockton Community Health Network
23. Greater Plymouth South Shore
24. Greater Attleboro/Taunton Area
25. Greater Fall River Area
26. Greater New Bedford Area
27. Cape Cod and the Islands











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